INDEX OF AUTHORS.

1877. Vols. I and II.

A.

Abadie, A., black-blue colour for paper, i, 361.

Abel, F. A., composition of gun-cotton, i, 453.

Abeles, dissemination of glycogen in the animal organism, ii, 204.

Abney, Captain, alkaline development of the photographic image, i, 572.

Ackroyd, W., selective absorption, i, 571.

Acworth. See Armstrong.

Adlung, W., the present state of the rice-starch manufacture, i, 363.

Ahlen, J. E., compounds of mercuric cyanide with the chlorides of the earth-metals, ii, 423.

Akestorides, T., some products of the action of red fuming nitric acid on illuminating gas, ii, 287.

Alessandri, L., and C. Conti, method for detecting the adulteration of lead iodide, i, 344.

Alexejeff, W., mutual solubility of phenol and water, ii, 472.

Allart. See Pellet.

Allen, A. H., determination of alcohol in ether and chloroform, ii, 930.

—— analysis of plating and gilding solutions, ii, 224.

—— solution of difficultly soluble substances, ii, 217.

Almén, A., relative sensitiveness of phenol and salicylic acid reactions, ii, 360.

Amagat, E. H., compressibility of liquids, ii, 833.

Andreæ. See Claus.

Annaheim, J., the absolute weight of atoms, i, 31.

—— action of fuming sulphuric acid on resorcin, ii, 613.

—— crystalline form, specific gravity, and molecular volume of oxysulphobenzide, i, 9.

Anschütz, R., and G. Schultz, new mode of formation of azobenzene, i, 206.

—— —— phenanthrenequinone, ii, 491.

—— —— action of quicklime on phenanthrenequinone, i, 210.

—— —— nitrophenanthrenequinone, i, 210.

Armsby, H. P., absorption of bases by the soil, ii, 913.

Armstrong, H. E., and J. J. Acworth, gases evolved by the action of metals on nitric acid, ii, 54.

Arnadon, J., use of quebracho as a dye-stuff, ii, 951.

Arnold, A. E., the analysis of tin ores, ii, 922.

Aronheim, B., action of stannic chloride on benzene, ii, 324.

Arzruni, A., safrol, ii, 202.

—— octohedral borax, ii, 112.

Atkinson, R. W., estimation of phosphoric acid in presence of silicic acid, ii, 353.

—— persulphocyanic acid, ii, 254.

Atterberg, A., action of phosphorus pentachloride on nitronaphthalenes, i, 85.

—— derivatives of α- and β-dinitronaphthalene, ii, 466.

—— the constitution of some derivatives of naphthalene, i, 467.

—— α-derivatives of naphthalene, ii, 623.

—— on the ferrocyanides of Wyrouboff, i, 298.

Atterberg and Widmann, the derivatives of γ-dichloronaphthalene, ii, 901.

Attfield, J., analyses of preserved vegetables, ii, 952.

Aubin. See Muntz.

Austen, P. T., nitro-derivatives of diphenylamine, ii, 756.

—— some simple laboratory manipulations, ii, 701.

INDEX OF AUTHORS.

1877. Vols. I and II.

A.

Abadie, A., black-blue colour for paper, i, 361.

Abel, F. A., composition of gun-cotton, i, 453.

Abeles, dissemination of glycogen in the animal organism, ii, 204.

Abney, Captain, alkaline development of the photographic image, i, 572.

Ackroyd, W., selective absorption, i, 571.

Acworth. See Armstrong.

Adlung, W., the present state of the rice-starch manufacture, i, 363.

Ahlen, J. E., compounds of mercuric cyanide with the chlorides of the earth-metals, ii, 423.

Akestorides, T., some products of the action of red fuming nitric acid on illuminating gas, ii, 287.

Alessandri, L., and C. Conti, method for detecting the adulteration of lead iodide, i, 344.

Alexejeff, W., mutual solubility of phenol and water, ii, 472.

Allart. See Pellet.

Allen, A. H., determination of alcohol in ether and chloroform, ii, 930.

—— analysis of plating and gilding solutions, ii, 224.

—— solution of difficultly soluble substances, ii, 217.

Almén, A., relative sensitiveness of phenol and salicylic acid reactions, ii, 360.

Amagat, E. H., compressibility of liquids, ii, 833.

Andreæ. See Claus.

Annaheim, J., the absolute weight of atoms, i, 31.

—— action of fuming sulphuric acid on resorcin, ii, 613.

—— crystalline form, specific gravity, and molecular volume of oxysulphobenzide, i, 9.

Anschütz, R., and G. Schultz, new mode of formation of azobenzene, i, 206.

—— —— phenanthrenequinone, ii, 491.

—— —— action of quicklime on phenanthrenequinone, i, 210.

—— —— nitrophenanthrenequinone, i, 210.

Armsby, H. P., absorption of bases by the soil, ii, 913.

Armstrong, H. E., and J. J. Acworth, gases evolved by the action of metals on nitric acid, ii, 54.

Arnadon, J., use of quebracho as a dye-stuff, ii, 951.

Arnold, A. E., the analysis of tin ores, ii, 922.

Aronheim, B., action of stannic chloride on benzene, ii, 324.

Arzruni, A., safrol, ii, 202.

—— octohedral borax, ii, 112.

Atkinson, R. W., estimation of phosphoric acid in presence of silicic acid, ii, 353.

—— persulphocyanic acid, ii, 254.

Atterberg, A., action of phosphorus pentachloride on nitronaphthalenes, i, 85.

—— derivatives of α- and β-dinitronaphthalene, ii, 466.

—— the constitution of some derivatives of naphthalene, i, 467.

—— α-derivatives of naphthalene, ii, 623.

—— on the ferrocyanides of Wyrouboff, i, 298.

Atterberg and Widmann, the derivatives of γ-dichloronaphthalene, ii, 901.

Attfield, J., analyses of preserved vegetables, ii, 952.

Aubin. See Muntz.

Austen, P. T., nitro-derivatives of diphenylamine, ii, 756.

—— some simple laboratory manipulations, ii, 701.

Aymonnet, M., diathermaneity of metals and paper, ii, 405.
—— on the quantity of heat absorbed by certain substances, i, 432.
—— relation between the absorbing powers of bodies for heat and their chemical equivalents, i, 430.

B.

v. Babo, A., fining of wines, ii, 379.
Backunts, H., action of chlorine on acetonitril, i, 297.
Backunts, H., and R. Otto, action of alkalis on the chlorinated acetonitrils, i, 297.
—— —— constitution of dichloropropionitril, i, 298.
—— —— direct conversion of nitrils into compound ethers, ii, 874.
—— —— monochloropropionitril, i, 297.
Baeyer, A., furfurol, ii, 444.
—— reaction of urea with furfurol, ii, 742.
—— oxyphthalic acid, ii, 784.
—— the compounds of phthalic acid with the phenols, Part I. i, 78, 95.
—— phthalic aldehyde, ii, 332.
—— on the phthalin and phthalidein of phenol, i, 307.
Baeyer, A., and H. Caro, synthesis of indol, ii, 898.
Baeyer, A., and P. Tönnies, furfurangelic acid and furfurobutylene, ii, 746.
Bahlmann, A., orthoamidobenzenesulphonic acids, orthobromobenzenesulphonic acids, &c., ii, 608.
Baily, W., optical properties of starch, i, 294.
Balard, A. J., obituary notice of, i, 512.
Balbiano, S., action of sodium hydrate on inactive fermentation amylic alcohol, i, 449.
Balbiano, L., inactive fermentation amylic alcohol, i, 292.
Balland, F., experiments on the alcohol from Barbary figs, i, 355.
Balland, M., influence of the leaves and flowering branches on the nature and quantity of the sugar contained in the flower-stem of the agave, ii, 506.
Barbier, Ph., fluorene and pyrogenic hydrocarbons, i, 70.
Barbier. See also Meyer.
Barbieri. See Schulze.
Barth, M., action of bromine on sodium ethylate, i, 290.
Bartlett, H. C., notes on some peculiar modifications of animal fats, the result of fermentation and digestion of the neutral fats of food, prior to and during assimilation, ii, 207.
Bartley, E. H., estimation of antimony in alloys, ii, 222.
Basarow, A., lecture-experiment on torpedoes, ii, 275.
Bastian, H. C., the fermentation of urine; in reference to a communication by Pasteur, i, 222.
Battandier, decomposition of a solution of potassium iodide by light, i, 577.
Baudrowsky, E., acetylenedicarbonic acid, ii, 592.
Baumann, E., α-cresylsulphuric acid, i, 206.
—— phenylsulphuric acids, i, 467.
Baumann, E., and E. Herter, behaviour of phenols in the animal body, i, 486.
Baumann. See also v. den Felden.
v. Baumhauer, E. H., diamonds, ii, 849.
—— etched figures on adular, albite, fluorspar, and sodium chlorate, ii, 116.
Bautlin, A., conversion of metanitrophenol into trinitroresorcin, ii, 475.
Bauton. See Grandeau.
Bayer, R. J., estimation of wool in yarn, i, 349.
Béchamp, A., detection of fuchsine and other colouring matters, i, 749.
—— the microzymes of germinated barley and of sweet almonds, as producers of diastase and synaptase, i, 106.
Bechert, T. F., the relative value of colchicum root, ii, 915.
Beckurts, H., action of sulphuric acid on toluene, ii, 774.
Beckurts, H., and R. Otto, conversion of α-dichloropropionic acid into monochloracrylic and pyroracemic acids, ii, 181.
—— —— dichloropropionic acids formed from dichloropropionitril, ii, 180.
—— —— solid dichloropropionitril, ii, 182.
—— —— a simple method of obtaining propionic acid from propionitril, ii, 179.
Becquerel, M., electro-capillary phenomena, ii, 820.
Bedson, P. P., on two isomeric bromonitrophenylacetic acids, ii, 482.
Behr, Arno, aconitic acid in the juice of the sugar-cane, ii, 182.
Behrend, P., action of sulphuryl chloride on alcohols, i, 182.

Behrend, P., sulphuryl chloride, and its behaviour to alcohols, ii, 287.
Beilstein, F., and A. Kurbatow, chlorinated anilines, i, 473.
—— —— chlorinated derivatives of benzene, i, 706.
Belani, E., combustibility of blast-furnace gases, ii, 376.
Bell, J. C., detection of alum in flour, 510.
—— milk analysis, ii, 941.
Bellamy, F., the migration of gases, i, 32.
Bellamy. See also Lechartier.
Bellucci, G., production of ozone by the pulverisation of water, i, 43.
Benedikt, R., action of bromine on phloroglucin, ii, 891.
—— action of nitric acid on tribromophloroglucin, ii, 193.
—— maclurin, ii, 496.
Bennett, J., new tests for anthracene, i, 748.
Bente, F., a cheap gas blow-pipe, ii, 275.
—— on the preparation of levulinic acid and on caragheen-sugar, i, 65.
Berendes, J., the volatile acids of croton oil, ii, 593.
Berg, Paul, estimation of boric acid by baryta, i, 736.
Berger, J., sulphuretted derivatives of cymene, ii, 601.
Berglund, Emil, amidosulphonic acid, ii, 111.
Bernard, C., critical experiments on the formation of sugar in the blood, i, 485.
Bernard, C., and L. Ehrmann, on a quick method of estimating lime in presence of magnesia, and on the application of magnesia to the defecation of sugar-liquors, i, 343.
Bernthsen, A., action of nascent hydrogen upon thiobenzamide, ii, 887.
—— an isomeride of benzenyldiphenylamidine, ii, 886.
—— thiamides of monobasic organic acids, i, 616.
Berthelot, M., absorption of free nitrogen by the proximate principles of vegetables under the influence of atmospheric electricity, i, 222.
—— an analysis of illuminating gas, i, 743.
—— composition of an ancient wine, ii, 953.
—— the decomposition of ammonium nitrate by heat, ii, 840.
—— equivalents of organic compounds, ii, 862.
—— fixation of nitrogen on organic substances under the influence of feeble electric tensions, ii, 862.
Berthelot, M., some fundamental data in thermo-chemistry, ii, 823.
—— heat disengaged by combination in the gaseous state; anhydrous acids and water, ii, 825.
—— oxidation of haloïd salts, and of sulphurous and arsenious acids, ii, 841.
—— does ozone combine with free nitrogen in presence of alkalis to form nitrites and nitrates? i, 438.
—— potassium thiosulphate, i, 278.
—— preparation of acetylene, ii, 868.
—— presence of benzene in coal-gas, ii, 447.
—— remarks on the preceding paper, 451.
—— the temperatures of combustion, i, 680.
—— thermal conditions of the formation of chloric acid and the chlorates, ii, 826.
—— thermic formation of hydroxylamine or oxyammonia, i, 46.
—— thermic phenomena of iodic acid, ii, 274.
—— thermo-chemistry of chloral and its hydrate, ii, 827.
Berthelot and Louguinine, thermal researches on citric acid, i, 681.
Bertoni, G., preparation of ethyl nitrate, i, 449.
Bertram, J., analyses of dried fruits, ii, 797.
Bertrand, A., electrodeposition of aluminium, magnesium, cadmium, bismuth, antimony, and palladium, 161.
—— solubility of lead carbonate in ammonium butyrate, i, 283.
Bertrand, E., crystalline form of melinophane, i, 178.
Bertrand. See also Finot.
Bettendorff, A., ardennite, separation of vanadic oxide from alumina and ferric oxide, ii, 175.
—— separation of vanadic acid from the oxides of aluminium and iron, ii, 922.
Bevan, E., note on a crystallised compound of salt and water, 440.
Biedermann, R., action of phthalic anhydride on aromatic diamines, ii, 783.
—— disuccinylphenylenediamine, i, 474.
Bill, J. H., double decomposition of potassium bromide and sodium chloride in the animal organism, i, 731.
Binder, O., commercial oxalic acid contaminated with sulphuric acid, ii, 642.

Bischof, C., analysis and determination of the fusibility of three Bavarian felspars, i, 446.
—— so-called plastic dinas-crystal, i, 354.
Bischof, G., corrosion of lead by water, i, 428.
—— on putrescent organic matter in potable waters, ii, 812.
Bizio, G., gelatin considered as a reducing agent, i, 325.
Blair, A. A., estimation of chromium and aluminium in steel and iron, ii, 802.
Blankenhorn, E., action of nascent thiocyanic acid on alcohol, ii, 423.
Blatzbecker, A., benzylisoxylene and benzoylisophthalic acid, i, 469.
Blondlot, R., diamagnetism of condensed hydrogen, ii, 820.
Blyth, A. W., manipulation of fatty acids, ii, 931.
—— micro-chemistry as applied to the identification of tea-leaves, and a new method for the estimation of theine, ii, 517.
—— the poison of the Cobra de Capello, ii, 206.
—— separation of salicylic acid, ii, 931.
Boas-Boasson. See Noelting.
Bodeweg, C., the glaucophane of Zermatt, ii, 171.
—— the optical and thermic properties of datholite, ii, 170.
v. Boeck, H., action of arsenic on the chemical change (metabolism) of albumins, ii, 912.
Boehm, J., absorption of carbonic acid by vegetable cell-walls, ii, 348.
—— absorption of water and lime-salts by leaves, ii, 350.
—— absorption of water and of lime-salts by the leaves of *Phaseolus multiflorus*, ii, 209.
—— the plant-nourishing value of calcium salts, i, 735.
—— rise of sap in plants, &c., ii, 348.
Boettger, R., electro-deposition of cobalt, ii, 375.
Boettinger, C., an absorbent of carbon monoxide, ii, 725.
—— the acids, $C_5H_6O_4$, i, 590.
—— the action of ammonia and amido-derivatives on pyroracemic acid, ii, 320.
—— action of aniline on pyruvic acid, ii, 596.
—— action of hydrocyanic acid on pyruvic acid, i, 455.
—— sulphoparabromobenzoic acid, i, 82.
—— action of zinc-dust on the chlorides of sulphoparabromobenzoic acid, i, 468.
Boettinger, C., dry distillation of glyceric acid, ii, 443.
—— glyoxylic acid, ii, 587, 878.
—— derivatives of uvitic acid, ii, 896.
—— see also Coellen.
Bogdanoff, action of antimonious chloride upon azobenzene, ii, 325.
Boguski, J. G., and N. Kajander, on the velocity of chemical action, ii, 831.
—— see also Hemilian.
Bohannon, R. D., zinc for analytical use, i, 345.
Bohlig, E., direct preparation of soda and potash from their chlorides, ii, 945.
Bolton, H. C., action of organic acids on minerals, ii, 358.
Bonné, Julius, benzoyl-aceto-acetic ether, ii, 437.
Boricky, E., on some minerals from the Silurian iron-stone deposits and the coal-formation of Bohemia, resembling ankerite, and on the chemical constitution of the minerals classed with ankerite, i, 581.
Bornemann, W., iodine chloride, ii, 110.
Bornhardt, A., estimation of albumin in urine, ii, 368.
Borns, H., paradibromobenzenesulphonic acid and some derivatives, ii, 768.
Bott, D. B., acid of willow bark, ii, 905.
Bouchardat, G., rotatory power of mannite and its derivatives, i, 449.
Boudier, M., foreign bodies in iron, i, 288.
Bougarel, C., new red colouring matter accompanying chlorophyll, ii, 790.
—— phyllic acid, a new substance contained in the leaves of certain plants, ii, 905.
Bouilhon, E., detection of fuchsine in wine, i, 234.
Bourgoin, E., conversion of ordinary pyrotartaric acid into tribromethene hydrobromide, ii, 443.
—— transformation of ordinary pyrotartaric acid into tribromethene hydrobromide, ii, 443.
—— See also Reboul.
Boussingault, experiments to demonstrate the conversion of sugar when added to fermenting must and marc of grapes, i, 358.
—— crystals of magnetic oxide of iron formed in roasting a spathic mineral, i, 446.
—— estimation of phosphorus in iron and steel, ii, 927.
—— saccharine matter contained in the petals of flowers, i, 452.

Boussingault, influence of soil on the nitrification of azotised organic substances in manures, i, 735.
—— vegetation of maize commenced in an atmosphere free from carbonic anhydride, i, 224.
Boutin, comparative analysis of roots of vines, i, 226.
Bowman, C. A., examination of commercial copaiba, ii, 932.
Brauner, B., estimation of arsenic as magnesium pyroarsenate, ii, 222.
—— estimation of cobalt in cobalt-potassium nitrite, ii, 511.
Breton. See Raoult.
Brezina, A., strueverite, i, 702.
Briosi, G., the function of chlorophyll in the vine, i, 732.
Broadhead, G. C., barite crystals from the Last Chance Mine, Morgan Co., Missouri, and goethite, from Adair Co., Missouri, ii, 713.
Brögger, W. C., enstatite crystals from Kjörrestad, near Bamle, Norway, ii, 718.
—— idocrase near Drammen, ii, 119.
Broglie, A., behaviour of phosphenyl chloride at a high temperature, ii, 453.
Brown, F. D., the physical properties of homologues and isomerides, ii, 836.
Brown, J. T., anthracene testing, i, 232.
Brown, W., a new niobium mineral from Amherst co., Virginia, ii, 853.
Brown, W. S., analysis of the ash of the ground-pea (*Arachus hypogaea*), as cultivated in Virginia, i, 225.
Bruegelmann, G., new method for the gravimetric and volumetric estimation of phosphorus, arsenic, sulphur, chlorine, bromine, and iodine in organic substances, and in vegetable and animal compounds, as well as for the estimation of sulphur in coal-gas, i, 739.
—— estimation of sulphur in coal-gas, i, 492, 741.
—— purification of the barium sulphate precipitate obtained in quantitative analyses, i, 737.
—— volumetric estimation of arsenic acid and phosphoric acid by uranium solution, i, 741.
—— volumetric estimation of sulphuric acid by barium chloride solution in acid liquids, i, 737.
Bruehl, J.W., determination of vapour-densities, i, 165.
Brugnatelli, T., and E. Zenoni, on an alkaloïd found in damaged Turkey corn and in mildewed maize bread, i, 323.
Bruning. See Meister.
Brunner, H., action of nitrils on the haloïd ethers of benzyl, i, 466.
—— vegetable acids of wine, ii, 883.
Brush, J. G., durangite, i, 286.
Bruylants, pimaric acid, ii, 341.
Buchheim, R., the pharmacological group of atropine, ii, 196.
—— the pharmacological group of piperine, ii, 195.
Buchner, L. A., analysis of the Tempelbrunnen at Rohitsch, ii, 176.
—— chemical observations on the water of the hot spring at Pfäfers, in Switzerland, ii, 284.
Bulk, C., simple exhausting and compressing air pump, i, 687.
Bunge, G., quantitative analysis of blood, i, 215.
Bunge, N., electrolysis of aqueous solutions of formic acid, ii, 311.
—— electrolysis of aqueous solutions of oxalic acid, i, 455.
Burg, O., lignite tar, i, 96.
Burkhardt, G. A., oxyterephthalic acid, ii, 336.
Butlerow, A., di-isobutylene, i, 448.
—— action of dilute sulphuric acid on trimethylcarbinol, ii, 874.
—— action of zinc-methyl on bromacetyl bromide, ii, 588.

C.

Cabot, S., action of sulphur at high temperatures on normal paraffins, ii, 867.
Cahours, A., researches on the substituted eugenols, i, 460; ii, 478.
Cahours, A., and E. Demarçay, reciprocal action of oxalic acid and the monatomic alcohols, i, 183.
Cailletet, L., utilisation of the gases issuing from metallurgical hearths, ii, 949.
Caillol. See Cazeneuve.
Cairns, Stockman, Holthof, and Korschett, determination of phosphorus in pig iron and iron ores, ii, 800.
Calderon, L., resorcin, ii, 474, 613, 889.
Cameron, C. A., estimation of colour in water, i, 231.
Camichel and Henriot, method of increasing the yield of potassium carbonate from molasses, ii, 876.
Campani, G., the manganese in ashes detected as manganese phosphate, ii, 223.

Campani, G., mutual action of potassium iodide and lead sulphate, i, 579.
Cannizzaro, S., derivatives of santonic acid, i, 470.
—— methyl santonate, i, 470.
Capitaine, F., preparation of soluble glass from fossil meal, i, 757.
Carey Lea, M., sensitiveness to light of various silver salts, ii, 690.
—— sensitiveness of silver bromide to the green rays, as modified by other substances, i, 266.
Carleson, J. A., on certain amides of the naphthylene-sulphonic acids, ii, 490.
Carnelley, Th., on high melting points, with special reference to those of metallic salts. Parts II and III, 365.
—— oxidation of ditolyl, ii, 653.
Carnot, A., determination of potash, ii, 921.
—— new salts of bismuth, and their use in the detection of potash, i, 50.
Caro. See Baeyer.
Carré, F., manufacture of carbon points for the electric light, ii, 270.
Carstanjen, E., action of neutral potassium sulphite on the quinones, ii, 892.
—— quinones, ii, 614.
Casamajor, P., estimation of potassium as acid tartrate, i, 341.
Caspers, C., anthracene testing, i, 347.
Cazeneuve, P., action of sodium hyposulphite on the hæmatin of the blood, ii, 346.
—— researches on hæmatin, i, 326.
Cazeneuve, P., and A. Caillol, extraction and estimation of piperine in pepper, ii, 516.
—— —— rapid extraction of caffeine, ii, 344.
Cech, C. O., a new apparatus for heating substances in sealed tubes under high pressure, suitable for analytical and synthetical purposes, ii, 639.
—— action of amines on chloral, ii, 587.
—— chloral cyanido-cyanate and its derivatives, i, 67.
—— colouring matter of viridic acid, i, 478.
—— the waste material of the parchment manufacture as a source of oxalic acid, ii, 380.
Cech, C. O., and P. Schwebel, dichloracetic acid, ii, 179.
Chamberland. See Joubert.
Chambon, E., action of ethoxyl-compounds of phosphorus on phosphorus chlorides and phosphorous acid, i, 292.
—— phosphorus oxybromochloride, i, 274.
Champion, P., and H. Pellet, composition of gun-cotton, ii, 304.
—— —— equivalent substitution of mineral substances in animals and plants, i, 98.
—— —— estimation of phosphorus and arsenic by ammonium molybdate, i, 739.
—— —— estimation of nitrogen tetroxide in organic substances; chemical composition of various gun-cottons, i, 228.
—— —— nitrostearic acid, i, 590.
—— —— volumetric estimation of arsenic, i, 739.
Chancel, G., detection of the principal colouring matters used in the adulteration of wine, ii, 371.
Chapman, E. T., blowpipe reactions, i, 489; ii, 216.
Charlesworth, J., obituary notice of, i, 493.
Chastaing, P., effect of light on chemical actions, and especially on oxidation, ii, 818.
Chester, A. H., identity of the so-called peganite of Arkansas, with the variscite of Breithaupt, and with the callainite of Damour, ii, 852.
—— on a fibrous variety of sepiolite from Utah, ii, 852.
Chevreul, E., on some combinations of ammonium chloride with the chlorides of potassium and sodium, ii, 839.
Chiappe, P., and O. Malissi, preparation of the iodides of potassium and sodium, and of potassium bromide, i, 277.
Chittenden, R. H., product of the oxidation of glycogen with bromine, silver oxide, and water, i, 64.
Christomanos, A., analysis of chrome iron ore, ii, 511.
—— iodine trichloride, ii, 163.
—— the specific gravity of iodine trichloride; a new method of determination for easily decomposible bodies, ii, 697.
Church, A. H., arsenic in tapers, ii, 922.
—— researches on colein, i, 249.
—— new applications of glycerin in the laboratory, ii, 244.
—— destruction of leather by gas, ii, 949.
—— analysis of plants, ii, 210.
—— an ancient specimen of tin, ii, 854.
—— variegated leaves, ii, 914.
Claesson, P., ethyl-mercaptan, ii, 294.
—— ethylsulphinic acid, ii, 296.
—— on the mercaptides and certain sulphides of ethyl, i, 585.

Claesson P., action of sodium mercaptan on iodo-methane, methyl-iodide, and chloroform, ii, 293.
—— behaviour of the sulphides of the alkali-metals to water, ii, 111.
—— thioglycollic acid, ii, 595.
Claisen, L., cyanides of acid radicles, ii, 423.
—— properties of the acid $C_9H_6O_3$ from benzoyl cyanide, ii, 616.
Classen, A., determination of manganese by precipitation as oxalate, ii, 804.
—— estimation of manganese, cobalt, nickel, and zinc by precipitation as oxalate, ii, 924.
—— separation of manganese in the form of anhydrous sulphide, ii, 514.
—— separation of iron from manganese, cobalt, nickel, and zinc, ii, 924.
—— separation of manganese from lime, ii, 805.
Clarke, F. W., notes on some fluorides, ii, 839.
—— note on mineral analysis, ii, 916.
—— note on molecular volumes, ii, 831.
Claus, A., anthraquinone, ii, 787.
—— crotaconic acid, and a new isomeride of itaconic acid, ii, 592.
—— structure of cyanic and cyanuric acid, i, 67.
—— melamine sulphocyanate, ii, 309.
—— potassium cyanide and chloromaleic ether, ii, 739.
—— conversion of ricinoleic acid into stearic acid, ii, 314.
—— thiohydantoïn, ii, 599.
Claus and Andreæ, action of oxalic acid on resorcin at high temperatures, ii, 889.
de Clermont, P., the action of alkaline sulphocyanates on the hydrochlorides of the alkaloïds of the fatty series, ii, 309.
—— manganese sulphide, ii, 708.
—— some general properties of metallic sulphides, ii, 842.
de Clermont, P., and H. Guiot, dissociation of ammoniacal salts in presence of metallic sulphides, ii, 829.
—— —— sulphide of manganese, ii, 408.
—— —— tendency of manganese sulphide to oxidise, ii, 844.
de Clermont, P., and E. Wehrlin, two new thiocarbamides (sulphureas), i, 70.
Clève, P. T., dichlorinated naphthalene corresponding with nitronaphthyl-sulphurous acid, i, 467.
—— nitro- and amido-naphthyl-sulphonic acids and their derivatives, i, 208.
Clève, P. T., nitro- and amido- naphthyl-sulphurous acids and their derivatives, i, 469.
—— two new modifications of dinitronaphthalene, i, 207.
Cloez, S., on the normal presence of copper in the blood of wild graminivorous animals, i, 346.
—— modifications of elæomargaric acid produced by light and heat, i, 454.
des Cloizeaux, M., a new anthophyllite from Bamle, in Norway, ii, 851.
Cloud, J. C., atacamite, i, 284.
—— determination of copper in "ore reducer" slag, ii, 650.
Colasanti, Guiseppe, a contribution to the theory of fever, i, 328.
—— influence of the surrounding temperature on the tissue-metamorphosis of warm-blooded animals, i, 327.
Cöllen, Th., and C. Böttinger, sulpho-parachlorobenzoic acid, i, 82.
Colley, R., on a case of work produced by the electric current, i, 160.
Collins, J. H., enysite, a new mineral, ii, 282.
—— henwoodite, a new mineral, ii, 282.
—— occurrence of scorodite, pharmacosiderite and olivenite in greenstone, ii, 283.
Conrad, Max, isopentyl (or amyl) acetoacetate, ii, 435.
Conrad, Max, and W. R. Hodgkinson, new method of synthesis of aromatised fatty acids, i, 590.
Conrad, W., hippuric acid and its derivatives, ii, 484.
Contamine. See Corenwinder.
Cooke, J. P., new mode of manipulating hydric sulphide, ii, 701.
Coquillion, J., apparatus for estimating marsh-gas in mines, ii, 806.
—— dissociation of hydrocarbons by means of palladium wire, and on the similarity of these phenomena to those of catalysis, ii, 831.
—— the limits between which fire-damp can explode; and some new properties of palladium, i, 166.
Corenwinder, B., presence of sugar in the leaves of beets, i, 336.
Corenwinder, B., and G. Contamine, researches on phosphoric acid in arable land, ii, 913.
Corne, J., action of phosphorus on iodates in presence of atmospheric oxygen, i, 578.
Corne, M., new reaction of iodides and iodates, i, 491.

Cossa, A., magnesium fluoride, ii, 707.
Cotton, S., wines coloured by fuchsine, ii, 521.
Crafts. See Friedel.
Crenshaw, S. D., stove-pipe deposits, i, 235.
Cresti, L., detection of traces of copper, ii, 803.
Crommydis, C. Z., easy method of preparing glycollic acid, i, 453.
Cross, C. F., normal primary heptyl alcohol, ii, 123.
Cugini, G., colouring matters of *Boletus luridus*, ii, 791.
Curie, J., and A. Millet, combination of chloral and acetyl chloride, i, 188.

D.

Dabney, C. W., cinnabar from Oregon, i, 284.
Dale, R. S., and C. Schorlemmer, transformation of aurin into rosaniline, ii, 121.
Dana, E., staurolite crystals from Fannin, Georgia, i, 582.
—— a twin crystal of pyrrhotin, i, 583.
Dannenberg, E., toxicological detection of colchicine, ii, 516.
D'Arsonval, A., maintenance of constant temperatures, ii, 697.
Daubrawa, H., trihydroxyl-antimonic acid, pyroantimonic acid, and oxychloride of antimony, ii, 406.
Daubrée, A., conclusions drawn from experiments on the action of gases produced by the explosion of dynamite in their relation to meteorites, and the circumstances attending the arrival of these bodies in our atmosphere, ii, 835.
—— mechanical actions of incandescent gases, ii, 161.
—— simultaneous formation of zeolites (chabasite and christianite) under the influence of hot springs in the neighbourhood of Oran, Algeria, i, 444.
Davis, G. E., analysis and valuation of spent iron oxides from gas works, ii, 927.
Davy, E. W., a new chemical test for alcohol, i, 108.
Deacon, H., obituary notice of, i, 494.
Debray, H., the dissociation of calomel vapour, i, 47.
Déhérain, O., absorption and emission of gas by the roots of plants, ii, 350.
De la Rue, P. B., obituary notice of, i, 496.
Demarçay, E., some derivatives of acetoacetic ether, ii, 594.
—— simple method of preparing certain mono-, di-, and trichlorinated acids, ii, 590.
Demarçay. See also Cahours.
Desvignes, F. C., obituary notice of, i, 495.
Deville, H. Sainte-Claire, physical and chemical properties of ruthenium, i, 443.
Dewar, J., studies on the chinoline series; transformation of chinoline into aniline, ii, 499.
Dibbits, H. C., decomposition of some ammonium salts by potassium and sodium salts, i, 490.
Dieulafait, L., diffusion of strontium in nature at the present time, and at the various geological epochs. Consequences relative to mineral waters, ii, 577.
Ditte, A., on some properties of cadmium sulphide, ii, 842.
—— action of calcium sulphate on the sulphates of the alkalis, i, 440.
—— separation of iron, chromium, and uranium, ii, 926.
—— action of halogen-acids on selenious oxide, i, 45.
—— action of halogen-acids on tellurous oxide, i, 45.
—— observations on Yvon's paper on the nitrates of bismuth, ii, 572.
Dittmann. See Wolff.
Dittmar, W., proximate composition of coal gas, i, 230.
—— note on Reboul's normal pyrotartaric acid, i, 188.
—— determination of the amount of chromium in chrome ores, i, 108.
Dittmar, W., and H. Robinson, determination of the organic matter in potable waters, ii, 806.
Djakonow, D., conversion of acid chlorides into alcohols, i, 58.
Dobroslavine, A., differences in the diastatic reactions of starch from different sources, i, 453.
Doebner, O., and W. Stackmann, action of benzotrichloride on phenol, ii, 327.
Doelter, C., the mineralogical composition of the melaphyr and augitic porphyry of South Tyrol, i, 584.
—— tridymite from the Hargittastock, Siebenbürgen, ii, 720.
Doer, W. H., azonaphthalene, ii, 623.
Donath, J., action of alkaline copper solution in hydroxylamine, ii, 406.
Dott, D. B., Davy's test for the purity of chloroform, i, 346.

Draper, J. C., effect of temperature on the power of solutions of quinine to rotate polarised light, and suggestions regarding the preparation to be used when quinine is employed as a medicine, i, 322.
Draper, H. N., solubility of ether in aqueous hydrochloric acid, ii, 178.
Droeze, J. H., solubility of gypsum in water and in saline solutions, ii, 112.
Drueding, C. G., analysis of cotton root-bark, ii, 915.
Ducla, industrial preparation of pure salts of alumina, ii, 521.
Duclaux, E., the separation of mixed liquids, i, 34.
Dumas, E., composition of "touchstone," i, 445.
Dunn, retarding action of glycerin, ii, 730.
—— action of ammonia on sodium phosphate, ii, 703.
Dupertuis. See Michler.
Dupré, A., copper in food, ii, 511.
—— detection of colouring matters in wine, i, 284.
—— detection of various colouring matters, ii, 227.
—— estimation of urea by means of hypobromite, i, 534.
Durand, new gold-bath, ii, 235.
Durassier. See Trève.
Durin, E., cellulose fermentation produced by vegetable organs, and probable utilisation of sugar for the production of cellulose in vegetation, i, 106.
Duvillier, E., recovery of platinum from chloroplatinates, ii, 574.
Dyckerhoff, R., chlorinated acetophenone, ii, 481, 327.

E.

Eder, J. M., double haloïd salts of cadmium, i, 689.
—— an alkaline iron developing liquid, ii, 235.
—— action of potassium ferricyanide on metallic silver, and conversion of silver negatives, ii, 234.
—— various methods for determining nitric acid, ii, 643.
Ekstrand, A. G., retene and some of its derivatives, ii, 497.
Elketoff. See Lagermarck.
Elsaesser, E., electrolysis with evolution of hydrogen at both poles, i, 678.
Emerson-Reynolds, J., glucinum, its atomic weight and specific heat, i, 579.
Emmerling, A., contributions to our knowledge of vegeto-chemical phenomena, ii, 348.
Emmerling, A., and C. Engler, synthesis of indigo-blue, i, 321.
Engler, C., an improvement of Hofmann's vapour-density apparatus, i, 269.
—— preparation of indol, i, 321.
Engler, C., and Janecke, properties of indol, i, 322.
Erismann, F., on the contamination of air arising from artificial illumination, and on the distribution of carbonic anhydride in close rooms, ii, 810.
Erlenmeyer, E., constitution of the radicle C_3H_5 in eugenol and anethol, ii, 479.
—— extraction of the so-called "Soluble Phosphoric Acid," from superphosphates, i, 759.
—— miscellaneous notes, ii, 581.
—— normal valeric acid from normal caproic acid, i, 590.
—— simple method of preparing metallic cyanides, i, 591.
Estcourt, C., butter analysis, i, 348.
Etard, A., monochloracetones, ii, 427.
—— preparation of alkaline nitrites, i, 685.
—— action of chlorochromic acid on organic bodies, i, 584.
—— salts of chromium sesquioxide, ii, 407.
—— nitrotoluquinone and chloranilic acid, ii, 476.
—— researches on the chromates, ii, 847.
Etti, Carl, catechin, ii, 488.

F.

Fairley, T., study of hydrogen dioxide, and of certain peroxides, including experiments to determine the heat of formation of the oxygen-molecule, i, 1, and i, 125.
Farries. See Kingzett.
Fassbender, R., the fluorescent body in *Atropa belladonna*, i, 213.
—— some double salts of calcium sulphate, i, 167.
v. den Felden, R. and E. Baumann, behaviour of terpenes in the organism, i, 487.
Fels, E. J., analysis of chrome ores, ii, 514.

Feltz, V., experiments showing that the poisonous properties of putrefied blood arise from organic ferments, ii, 506.
Feltz, V., and E. Ritter, action of fuchsine introduced into the stomach and the blood, i, 487.
Field, F., note on a new Cornish mineral, i, 56.
—— ludlamite, a new Cornish mineral, i, 580.
Fileti, M., and R. Schiff, constitution of cyanamide, ii, 306, 733.
Filsinger, F., preparation of lithium carbonate and some new compounds of lithium from lepidolite, i, 441.
Fimaro, A., quantitative separation of iron and manganese in ferromanganese ores, ii, 805.
Finkler, Dittmar, isopepsin, i, 483.
Finkler, Dittmar, and Ernst Oertmann, influence of respiration on the metamorphoses of tissue, i, 482.
Finot, E., analysis of the gases of the Grotta del Cane, ii, 448.
Finot, L., and A. Bertrand, estimation of carbon disulphide in alkaline sulphocarbonates, i, 744.
Fischer, E., the aromatic hydrazine-compounds, i, 616; ii, 887.
Fischer, F., conditions which should be fulfilled by water for domestic use, ii, 944.
—— temperature and composition of the gases evolved from ultramarine furnaces, i, 111.
—— on the temperature required in Leblanc's soda-process, and the composition of the gases evolved, i, 237.
Fischer, Otto, benzoyl-dimethylaniline, ii, 606.
—— action of nitrous acid on substituted amides, ii, 607.
—— the phthaleins of tertiary aromatic bases, i, 645; ii, 607.
—— saliceïn of methylaniline, ii, 605.
Fittica, F., benzonitrobenzoic acid, ii, 483.
—— nitrobenzoic acids, ii, 483.
—— synthesis of nitro-acids, ii, 483.
Fittig, R., the acids in Roman chamomile oil, i, 97.
—— conversion of citraconic anhydride into xeronic anhydride, i, 64.
—— new derivatives of mucic acid, i, 65.
—— on the non-saturated acids. Part I, ii, 735.
—— on so-called non-saturated compounds, i, 61; ii, 429.
—— simple method of preparing glycollic acid, i, 59.
Fitz, A., alcoholic fermentation, i, 226.
—— fermentation of glycerin, i, 226.
—— schizomyces-fermentation of glycerin, mannite, starch, and dextrin, ii, 214.
Flavitsky, constitution of amylene, ii, 286.
Fleischer, A., and G. Nemes, action of nitric acid on carbanilide, ii, 886.
Fleischer, E., citric acid, i, 591.
Fleming, A., polarisation of electrodes in water free from air, i, 266.
Fleury, M., researches on the inversion of sugar by acids and salts, i, 451.
Fliche, P., and L. Grandeau, composition of leaves, i, 334.
Floyd, F. B., chemical character of the pigment of the negro skin, i, 329.
Flückiger, note on dikamali resin, ii, 501.
Förnebohm, A. E., distribution of zircon in rocks, ii, 577.
Forbes, D., obituary notice of, i, 496.
Fordos, G. M., detection of fuchsine in wines, i, 750.
Forrer. See Gnehm.
Forster, J., formation of glycogen in the bodies of animals, ii, 204.
—— loss of lime in the body, especially in the bones, on an insufficient supply of lime, ii, 792.
—— situation of the deposit of fat in animals on different diets, ii, 797.
Foster. See Meyer.
Franchimont, A., derivatives of dextrose and levulose, ii, 583.
—— freezing point of ether, ii, 425.
Francis, E., composition of boiler incrustations, ii, 813.
—— prussic acid from cassava, ii, 515.
Frantz, use of palladium instead of silver in electrodeposition, ii, 239.
Franz, A., testing roasted coffee for chicory, i, 752.
Frébault, A., action of iodine on carminic acid and on hæmatin, i, 347.
Fredericq, L., distribution of the carbonic anhydride contained in blood between the serum and the corpuscles, ii, 909.
Frémy, E., chlorophyll, ii, 629.
—— a general method of analysis of vegetable tissues, i, 229.
—— irisation of glass, i, 687.
—— salts of manganese dioxide, i, 52.
Frerichs, F., a new method of analysing carbon-compounds, ii, 509.
—— new laboratory apparatus, ii, 838.
Fresenius, F. R., determination of potassium as platinochloride in presence of the chlorides of the metals of the alkaline earths, ii, 220.

Fresenius, R., method of estimating copper and sulphur in cupreous iron pyrites, and in the Burat ore before and after lixiviation, ii, 650.
Frey, E., preparation of earth-metals, i, 689.
Friedel, C., new general method for the synthesis of hydrocarbons, ketones, &c., ii, 864.
—— monochloromethyl oxide, ii, 424.
Friedel, C., and J. M. Crafts, a new general synthetical method of producing hydrocarbons, &c., ii, 725.
Friedel, C., and J. Guérin, titanium compounds, i, 168.
Friedel and Sarasin, crystalline phosphate and arsenate of copper, i, 690.
Friedlaender, P., a new acid from phenanthrene-quinone ii, 492.
—— diphenyleneglycollic acid, ii, 336.
Friswell, R. J., and A. J. Greenaway, note on thallious platinocyanide, ii, 251.
Frühling, R., and J. Schulz, preparation of betaine, ii, 627.
Fuchs, F., division of the positive metal in the galvanic circuit between two acids, i, 677.
Fudakowski, H., digestion of linseed mucilage with artificial gastric juice, ii, 911.
—— action of potassium permanganate on a neutral solution of dulcite, ii, 877.
—— further observations on lactoglucose and galactose obtained by the action of dilute sulphuric acid on lactose, ii, 877.
Funke. See Wolff.

G.

Gabriel, S., disulphocyanobenzene, ii, 325.
—— iodo- and bromazo-compounds of benzene, i, 307.
—— orthothioformic ethers, ii, 311.
—— see also Michael.
Galbraith, W., analysis of chrome iron and steel, ii, 357.
Gallois. See Hardy.
Garrigou, presence of mercury in the spring "du Rocher," at the establishment Mont Cannadore (St. Nectaire-le-Haut, Puy-de-Dome), ii, 418.
Garzarolli-Thurnlak, K., action of potash on trichlorobutyric acid, i, 59.
Gatehouse, J. W., action of manganese dioxide on ammonium nitrate, ii, 112.
Gatehouse, J. W., salt in beer, ii, 940.
Gauduin, effect produced by the admixture of foreign substances with charcoal in the preparation of carbon points for the electric light, ii, 104.
Gautier, A., on the catechins, ii, 892.
—— dephosphorisation of iron ores, i, 759.
—— dilution of wines. Influence of plastering, fining, brandying, &c., on the weight of the extract, i, 750.
—— oenotannin, ii, 897.
—— on the artificial colouring of wines, and the means of detecting the fraud. ii, 935.
—— manganese steel, ii, 376.
Gavazzi, R., analysis and fertilising power of lavas, &c., ii, 861.
Gawalowski, A., adulteration of sodium-palladium chloride with sodium chloride, ii, 225.
—— comparative analysis of filter-papers, ii, 217.
—— recovery of uranium residues, i, 345.
Gayon, M. N., action of antiseptic and toxic vapours on the fermentation of fruit, ii, 508.
—— transformation of the crystallisable sugar of brown sugar into inactive glucose, ii, 303.
Gedl, M., influence of salicylic acid and sodium salicylate on bodily temperature, i, 732.
Geinitz, F. E., mineral pseudomorphs, i, 691.
von Geldern, H., a substance in beer resembling colchicine, i, 325.
Gélis, A., use of alkaline sulphides in leather dressing, ii, 243.
Genth, F., some American vanadium minerals, i, 175.
Gerber, M., preparation of chrome iron and analogous compounds, ii, 709.
v. Gerichten, E., apiol, i, 326.
Gerlach, T., use of the ammonia-soda process in working up gas-liquors, ii, 236.
Gerland, B. W., separation of vanadic acid from alkalis, ii, 922.
Gerland, W., on ammonium vanadate precipitated from alkaline vanadates by ammonium chloride, ii, 802.
Gernez, D., condition of salts in solution, ii, 273.
—— prismatic and octohedral sulphur, i, 44.
—— supersaturated solutions, ii, 696.

Gessner, E., the exhaustive action of bromine on some aromatic bodies, i, 300.
—— on the naphthalene-sulphonic acids, i, 315.
Geuther, A., on the constitution of phosphorus bromochlorides, and on "molecular compounds," i, 274.
—— constitution of phosphorous and hypophosphorous acids, i, 276.
—— decomposition of phosphorus-compounds, i, 296.
Gibbs, Wolcott, on complex inorganic acids, ii, 847.
Gintl, W., analysis of the mineral waters of Neudorf, near Petschau, in Bohemia, ii, 861.
de Girard, J., spontaneous alteration of hydrocyanic acid, and a new case of the complete transformation of that acid, i, 65.
Gladstone, J. H., and A. Tribe, preparation of copper-zinc couples, i, 561.
Glanzmann, R., the uses of patent colours, i, 115.
Glatzel, E., the oxide of titanium obtained by the solution of titanium in acids; and some new titanium compounds, i, 688.
Glatzel, P., new experiments on thermal expansion, ii, 820.
Gnehm, R., α-toluenedisulphonic acid, ii, 893.
Gnehm, R., and R. Forrer, preparation of toluenedisulphonic acid, ii, 611.
Godeffroy, R., ash of *Xanthium spinosum*, ii, 351.
—— cæsium and rubidium compounds, i, 685.
—— some new reactions of alkaloïds, ii, 365.
—— reagents for alkaloïd separations, i, 348.
—— silicotungstates of cæsium and rubidium, i, 175.
Goldschmidt, G., a modification of vapour-density determination, ii, 404.
Goldschmidt, V., blowpipe examination of chloride, bromide, and iodide of silver by means of bismuth sulphide, ii, 356.
Goppelsroeder, F., aniline-black dye-bath. Transformation of aniline-black into a fluorescent rose-coloured substance, ii, 606.
—— metamorphoses of aniline-black, ii, 763.
v. Gorup-Besanez, E., glutamic acid from the juice of vetch-germs, ii, 739.
—— ostruthin, i, 717.
Goslich, C., a new dibromobenzenesulphonic acid, ii, 460.
Göttig, C., ethyl-compounds of salicylic acid, i, 313.
Göttig, C., note on the synthesis of the aldehydes, ii, 304.
Gounard, F., the zeolites of the Department Puy-de-Dome, ii, 283.
Gourgeu, A., capacity of saturation of manganous acid, i, 442.
Gouy, character of flames charged with saline dust, ii, 817.
—— photometric researches on coloured flames, ii, 817.
—— spectra of metals at the base of flames, ii, 105.
Grabowsky, J., Galician ozokerite and ceresin, ii, 284.
Gradman. See Michler.
Graenvik, E., the action of chlorocarbonic ether on amidophenol, i, 472.
Graham, A. McD., effect of aluminium sulphate on sewage, i, 355.
Gramp, F., action of nitric acid on mercuric sulphide, i, 282.
Grandeau, H., and A. Bouton, chemical examination of mistletoe, ii, 211, 636.
Grätzel, A., on creasote and carbolic acid, ii, 515.
Greene, F. V., extraction of caffeine from guarana, ii, 627.
—— the tannic acid of guarana, ii, 897,
Greenaway. See Friswell.
Grenfell, J. G., on supersaturated saline solutions, i, 436.
Grete, M. E. A., estimation of carbon sulphide, copper salts, and caustic alkalis by xanthate of potassium, ii, 929.
Griess, P., action of diazo-compounds on tertiary amines, ii, 454.
—— new researches on diazo-compounds; constitution of compounds of diazobenzoic acid, i, 474.
Griessmayer, V., studies on the colouring matters of wine, and on wine-colouring, ii, 368.
—— the peptones of beer-worts, ii, 521.
Grimaux, E., tartronic acid, ii, 740.
—— terephthalic aldehyde, i, 206.
—— synthetic researches in the uric acid group, ii, 740.
Grimshaw, H., di-isopentyl or diamyl, ii, 260.
—— note on the discovery of diamyl, ii, 687.
Grodzki. See Kraemer.
Grosheintz, H., preparation of crystallised phosphorous acid, ii, 701.
—— note on the preparation of ethene

glycol by Hüfner's and Zeller's method, ii, 875.
Grosjean, B. J., action of organic acids on minerals, ii, 358.
—— action of tartaric acid on calcium carbonate, ii, 647.
von Grote, A., and B. Tollens, levulinic acid, ii, 881.
Groth, P., symmetrical growth of circular-polarising crystals, ii, 115.
Grothe, H., use of soluble glass in the textile industry, i, 757.
Grützner, P., formation and separation of pepsin, ii, 204.
Gscheidlen, R., sulphocyanates in the urine, ii, 205.
Guareschi, J., asparagine and aspartic acid, i, 457.
—— preliminary note on naphthalene derivatives, i, 712.
Guérin. See Friedel.
Guerout, A., electrolysis of sulphurous acid, ii, 820.
—— researches on the coefficient of capillarity, i, 573.
Guichard, *Xanthium spinosum*, i, 720.
Guignet, M., nickeliferous iron from St. Catherine, Brazil, ii, 854.
Guiot. See De Clermont.
Gurit, galena from Engelskirchen, ii, 855.
Gustavson, G., new method of brominating aromatic hydrocarbons in presence of aluminium bromide, ii, 599.
Guthrie, F., salt solutions and attached water, i. 36.
Guyot, P., and R. Bidaux, detection of rosolic acid in presence of fuchsine, i, 747.

H.

Haarstick, F. A., examination of beer, ii, 372.
Haas, H., properties of albumin containing very small quantities of salts, ii, 345.
Haberlandt, G., winter colouring of non-deciduous leaves, ii, 349.
Habermann, J., glycyrrhizin, ii, 500.
—— methyl ethers of resorcin, ii, 474.
—— a modification of Dumas's process for determination of vapour-densities, ii, 697.
Hager, H., tannin in gentian root, ii, 351.
—— tests for malt extract, ii, 373.
—— testing of castor oil, ii, 364.
—— testing of quinine salts for strychnine and morphine, i, 748.
Hager, H., zinc phosphide, ii, 113.
Hall, L. B., and Ira Remsen, oxidation of mesitylene-sulphonic acid, ii, 777.
Haller, A., action of chromyl dichloride on anthracene, ii, 494.
Halse, W. E., and E. Steiner, crystallised grape-sugar, ii, 730.
—— optically inactive sugar, ii, 732.
Hamlet, W. M., and C. B. Plowright, occurrence of oxalic acid in fungi, ii, 796.
Hammarsten, Olof, contributions to the theory of the coagulation of fibrin, i, 726.
Hampe, W., on boron, i, 273.
Hanamann, J., composition of Bohemian wines, ii, 953.
Hankel, W., on a change in the direction of the polarisation current after the passage of an oppositely directed galvanic current, ii, 819.
—— the influence of sunlight, &c., on the electrical behaviour of metals dipped in water or saline solutions, ii, 818.
Hanks, H., occurrence of durangite in the tin-ore district of Durango, Mexico, ii, 719.
Hannay, J. B., compounds of calcium sulphate, ii, 399.
—— examination of substances by the time method, ii, 381.
Hanriot, glycerin derivatives, ii, 301.
Hans, H., a levorotatory substance in normal urine, i, 731.
Hardy, E., jaborandi (*Pilocarpus primatus*), i, 324.
Hardy, E., and N. Gallois, active principle of the *Strophantus hispidus*, ii, 501.
Harland. See Wigner.
Harnack, E., the alkaloïds of the fly agaric, ii, 197.
Harrington, B. J., pyrrhotite from Elizabeth Town, Ontario, i, 285.
Hart, E., and Ira Remsen, isomeric sulpho-acids from paranitrotoluene, ii, 776.
Hartley, W. N., on attraction and repulsion of bubbles by heat, and on the constant vibration of minute bubbles, ii, 271.
—— observations on fluid cavities, i, 241.
Hartmann, O., derivatives of paroxybenzoic acid, ii, 895.
Harvey, A., obituary notice of, i, 499.
Hässelbarth, experiments with barley, ii, 351.
Haubst, P., volumetric estimation of sulphuric acid in waters, ii, 917.

Hauch, A., extraction of copper by means of an acid solution of ferrous chloride, ii, 934.
Hausamann, O., some derivatives of *a*- and *β*-naphthoic acid, i, 317.
Hausmann, U., betulin, i, 94.
Hausner, J., wool and cloth dyed green with picric acid, ii, 243.
Hautefeuille, P., reproduction of albite, ii, 574.
—— see also Troost.
Hawes, G. W., a lithia-bearing variety of biotite, i, 56.
—— the rocks of the "chloritic formation" on the western border of the New Haven Region, i, 286.
Hawliczek. See Lippmann.
Hearder, J., obituary notice of, i, 500.
Hecher, R., determination of nitrous acid and organic matter in potable waters, ii, 647.
Heeren, the solution of caoutchouc, i, 363.
Heidepriem, F., on the relation between the quantity of starch contained in potatoes, and their relative density; and a new table for calculating the percentage of starch contained in potatoes from their specific gravity, ii, 233.
Heill, H. B., some products of the distillation of wood at low temperatures, ii, 746.
Heintz, W., action of hydrocyanic acid upon diacetonamine chloride, ii, 878.
—— alcoholic bases formed by the hydrogenisation of di- and tri-acetonamine, i, 592.
—— decomposition of nitrosotriacetonamine by acids, ii, 583.
—— dehydrotriacetonamine, i, 591.
—— diacetonamine and vinyl-diacetonamine, ii, 877.
—— a new platinum salt containing two ammonium bases, i, 592.
—— nitrosotriacetonamine, ii, 428.
—— production of phorone from nitrosotriacetonamine, ii, 583.
—— reducing action of charcoal at low temperatures, ii, 582.
—— a sixth acetone base, i, 592.
Heinzelmann, G., derivatives of metabenzene-disulphonic acid, ii, 771.
Heisch, C., cocoa, ii, 212.
Heisch, C., W. C. Young, and G. W. Young, products of combustion of coal gas, ii, 948.
Heiss, E., can inorganic constituents be withdrawn from the bones by the introduction of lactic acid into the intestine, i, 216.
Hell, Carl, and E. Mëidinger, oxidation of an acid contained in crude petroleum, ii, 432.
Hell, Carl, and A. Waldbauer, action of alcoholic potash on monobromisobutyric acid, ii, 313.
Hellesen, W., the effect of heat on voltaic circuits completed by an electrolyte, i, 429.
Hellon, R., and A. Oppenheim, ethylic propionyl-propionate, ii, 439.
Helmholtz, H., account of researches by Dr. E. Root, concerning the permeation of platinum by electrolytic gases, ii, 271.
Helmholtz, H., and E. Root, penetration of platinum by electrolytic gases, ii, 161.
Hemilian, a new hydrocarbon obtained from the highest boiling portions of American petroleum, ii, 867.
Hemilian, Mendelejeff, and Bogusky, compression of gases by low pressures, i, 32.
Henneberg, fat-forming equivalent of albuminoïds, ii, 347.
Henner, O., birch-water, ii, 212.
Henniges, A., preparation of anthraquinone by the action of chloride of lime solution and a metallic salt on anthracene, i, 360.
Henriot. See Camichel.
Henry, A., and P. Wallheim, the pancreatic juice of herbivora, ii, 204.
Hensgen, C., action of dry hydrogen chloride on sulphates, ii, 110.
—— action of dry gaseous hydrochloric acid on sulphates at various temperatures, i, 439.
Hepp, E., some aldehyde-compounds, i, 314.
Hercz, M., behaviour of certain ketones to oxidising agents, ii, 425.
Hermann, F., action of alkali-metals on ethyl succinate, ii, 319.
Hermann, L., the thermo-electric force of zinc and solution of zinc sulphate, ii, 271.
Hermann, R., researches on the metals of the tantalum group, and on neptunium, a new metal, ii, 166.
Herrera, A., a new process for the preparation of extracts without heat, ii, 949.
Herrmann, F., a new formation of salicylic acid, ii, 485.
Herter. See Baumann.
Hertz, I., shell-lac and sarcosinic acid, i, 479.
Herwig, H., the movements of electrified mercury, i, 677.
—— electric resistance of liquids under high pressures, ii, 161.

Herzfeld. See Tiemann.
Hess, P., burnishing of iron, i, 114.
Hesse, O., carbonusnic acid, ii, 896.
Heumann, Karl, action of alkaline haloïds upon ultramarine, ii, 707.
—— apparatus for demonstrating the manufacture of sulphuric acid, 438.
—— contributions to the theory of luminous flames, i, 43, 265; ii, 106.
—— silver-ultramarine, ii, 572.
van Heumen, F., and W. van Hasselt, manufacture of yeast, i, 119.
Hibsch, J. E., some methods for the estimation of sulphur in iron, ii, 799.
Hight, G. A., notes on some experiments made with a view to ascertain the practical value of a proposed method of determining the mineral strength of soils by means of water-culture, i, 156.
Hilger, A., analyses of brown coal, ii, 850.
—— identification of foreign colouring-matters in red wines, i, 751.
—— testing of vinegar, coffee, pepper, and beer, ii, 232.
—— analyses of zinkenite, tetrahedrite, trachyte, and magnetic pyrites, ii, 853.
—— detection of foreign colouring-matters in red wine, ii, 938.
Hillebrand, W. F., the specific heats and atomic weights of cerium, lanthanum, and didymium, i, 50.
Hillebrand, W. F., and R. Fittig, constitution of quinic acid, ii, 488.
Himly, a new method of observing melting points, ii, 162.
Hirschwald, J., gas-apparatus for quantitative analysis, ii, 215.
Hobler, F. H., obituary notice of, i, 501.
Hobson, A. L., obituary notice of, i, 504.
Hock, M., manufacture of alabaster-, milk-, bone-, cryolite-, and opal-glass, ii, 946.
Hodges, N. D. C., metallic salts of hydroxylurea and double salts of other hydroxamates, i, 69.
Hodgkinson, W. R., action of aluminium iodide upon glycerin, ii, 300.
—— pseudosulphocyanogen, i, 195.
Hodgkinson, W. R., and H. C. Sorby, *Pigmentum nigrum*, the black-colouring matter of hair and feathers, i, 427.
Hönig, M., and M. Rosenfeld, grape-sugar, ii, 303.
van't Hoff, J. H., the doctrine of limits in the formation of ether, ii, 418.
van't Hoff, J. H., carbon chlorobromide from tri-chloracetic acid, ii, 422.
—— Ladenburg's benzene formula, ii, 190.
—— styrax, i, 214.
—— the volatile oil from styrax, i, 478.
Hoffmann, H., honey-dew, ii, 210.
Hofmann, A. W., oxidation of aromatic acetamines, i, 90.
—— chrysoïdin, ii, 326, 457.
—— action of hydrogen sulphide on the isonitrils, ii, 604.
—— preparation of monomethylaniline, and experiments on the action of methyl chloride, bromide, and iodide on aniline, ii, 604.
—— contributions to the history of vapour-density determinations, ii, 570.
—— determination of vapour-densities in the Torricellian vacuum, i, 33.
—— the polythiohydrates of strychnine, ii, 789.
—— xylidines, i, 92.
Hofmann, P. W., preparation of sulphur from pyrites, ii, 235.
Holthof, C., determination of phosphorus in pig iron and iron ores, ii, 800.
—— simple suction arrangement for rapid filtering, i, 508.
Hondart, E., examination of the dried extracts of wine, ii, 939.
Hoppe-Seyler, F., differences of chemical structure and of digestion amongst animals, ii, 202.
Hornstein, F., remarks on Fischer's communications upon cat's-eye quartz, ii, 411.
Horstmann, A., dissociation, i, 433.
—— vapour-density of ammonium sulphides, ii, 840.
Houzeau, A., acidimetry, ii, 916.
—— some analytical processes for meteorological purposes; ammonia, ii, 510.
How, H., the stilbite (desmine) of Nova Scotia, i, 582.
—— relative composition of ulexite and franklandite, ii, 174.
Howard, D., the distribution of the alkaloïds in cinchona, ii, 636.
Howe, A. B., gmelinite from Nova Scotia, ii, 719.
Huber's reagent, ii, 352.
Hübner, H., and K. Buchka, phenoxylic acid, ii, 485.
Humbert. See Piccard.
Humpidge, T. S., on the coal gas of the metropolis, i, 621.
Hunäus, P., citric and aconitic acids, i, 455.
Husemann, A., Java rhubarb, ii, 914.
Husson, some reactions of hemoglobin and its derivatives, i, 753.

Hutchings, W. M., detection of bismuth by von Kobell's test, ii, 922.
—— formation of moss copper, ii, 113.
—— analysis of chrysocolla and copper pitchblende, i, 55.
—— notes on specimens of chrysocolla, ii, 575.

I.

Idanoff, diethyl-methyl-acetic acid, i, 454.
Ihle, R., cresols and cresotic acids, i, 708.
Iles, M. W., a new qualitative reaction for boric acid, ii, 352.
Iles, M. W., and Ira Remsen, oxidation of the sulpho-acids of metaxylene, ii, 776.

J.

Jackson, C. Loring, on the base, $C_{13}H_{13}N$, from aniline-tailings, i, 606.
—— base derived from a waste-product in the aniline manufacture, ii, 762.
Jacobsen, O., phorone-cumene, ii, 447.
—— derivatives of the xylenes, ii, 600.
—— abnormal solubility of zinc xylidate, ii, 617.
—— formation of the benzene-hydrocarbons by dry distillation, ii, 444.
—— occurrence of orthoxylene in coal-tar, ii, 600.
—— preparation of paraxylene from coal-tar oil, i, 600.
Jacquemin, E., application of the ferrosopyrogallic reagent to the estimation of bicarbonates in water, i, 340.
—— rhodeine, a new test for aniline, i, 109.
Jäger, E., derivatives of dithymyltrichlorethane, i, 262.
Jäger, J. H., action of monochloracetic acid on the thiocyanates of the aromatic monamines, ii, 873.
—— behaviour of melam to sulphuric acid, i, 298.
v. Jaksch, R., occurrence of nuclein in the human brain, i, 221.
Janecke. See Engler; also Lieben.
Jannasch, P., preparation of durene from paradibromo-benzene, ii, 751.
Japp, F. R., and G. Schultz, occurrence of methylanthracene in coal-tar, ii, 624.
Jarisch, A., analysis of blood-ash, ii, 940.
Jarolimek, A., hardening of steel, 113.
Jean, F., determination of alkaline sulphates, i, 738.
—— quebracho, a new tanning material, ii, 897.
Jean, F., and H. Pellet, estimation of oxalic acid and oxalates, ii, 358.
—— —— volumetric analysis of a mixture of the sulphates of the alkalis and alkaline earths, ii, 353.
—— —— volumetric estimation of chromium, ii, 354.
Jean. See also Weil.
Jeanmaire, method of preventing aniline-black from turning green, ii, 951.
Jeanneret, J., decomposition of gelatin and albumin by pancreas-ferments in absence of air, ii, 630.
Jehn, C., determination of acetic acid, ii, 641.
Jenkins, E. H., effect of silicic acid upon the estimation of phosphoric acid by ammonium molybdate, i, 344.
Jobst, J., some constituents of coto-barks, ii, 201.
—— coto-barks and their crystalline constituents, i, 480.
—— cotoïn, i, 480.
—— influence of nitrogenous manure on the yield of alkaloïds in certain plants, ii, 213.
Joergensen, S. M., herapathite and similar acid periodides, i, 210, 713; ii, 571.
Johansen, E., chemistry of the barks of the oak, willow, and elm, i, 720.
Johnson, G. S., potassium tri-iodide, i, 249.
Johnson, S. W., on Thorpe's and Bunsen's methods for the estimation of nitrogen in nitrates, ii, 799.
Jolin, S., some bromine-derivatives of naphthalene, ii, 901.
Jollett, J. H., change of composition in potatoes during disease, i, 732.
Jones, E. W. T., butter-fat; its analysis and composition, ii, 519.
Jones. See Pruen.
v. Jonstorff, J., molecular changes, ii, 405.
Joubert, J., and C. Chamberland, note on the fermentation of fruits plunged into carbonic anhydride, i, 106.
Jungck, M., precipitation of iron oxide and alumina by sodium acetate, i, 344.

Jurisch, K., Deacon's process for the preparation of chlorine, i, 350.

K.

Kajunder. See Boguski.
Kanonnikoff, J., and A. Saytzeff, action of a mixture of ethyl and allyl iodides on ethyl formate in presence of zinc, ii, 298.
Kanonnikoff. See also Saytzeff.
Karetnikoff, action of silver oxalate on ethene and propylene bromides, ii, 422.
Keates, T. W., mode of generating sulphurous acid as a disinfectant, i, 236.
Keller, J. L., chemical examination of Füh-ling (*Lycorperdon solidum*), i, 337.
Kern, A., preparation of monomethylaniline, ii, 325.
Kern, Sergius, presence of copper in cast iron, i, 235.
—— the new metal, davyum, ii, 278, 712.
—— preliminary researches on the action of magnesium on some organic compounds, ii, 285.
—— determination of manganese in spiegeleisen and ferro-manganese, ii, 647.
—— estimation of phosphorus in the form of ammonio-phosphomolybdic salt, i, 738.
—— preparation of some coloured fires used in pyrotechny, i, 235.
—— preparation and use in casting steel of alloys of silicon and manganese, ii, 522.
—— quantitative analysis of slags, fire-clay, bricks, and iron ores, ii, 356.
—— presence of occluded oxygen in steels, especially in Bessemer steel, ii, 815.
—— calculation of the percentage of chemically combined carbon in analyses of steels by Eggerts' colometric method, i, 742.
Kiandi, Amenc, Fabrie, and Milius, manufacture of aluminium sulphate, gelatinous silica, and calcium chloride from blast-furnace slags, ii, 239.
Kielmeyer, A., cochineal for woollen goods, ii, 380.
Kimball, A. S., some changes in the physical properties of steel, produced by tempering, i, 175.
Kimich, C., azo-compounds of methazonic acid, ii, 325.
Kingzett, C. T., critical notes on muscarine and some allied bases, ii, 628.
—— limited oxidation of essential oils, and preliminary report on the ethers, i, 183.
—— note on pilocarpine (from Jaborandi), ii, 907.
Kingzett, C. T., and T. Farries, the chemical constituents of *Convolvulus scammonia*, ii, 901.
Kingzett, C. T., and M. Zingler, albumin of commerce, ii, 952.
Kingzett. See also Paul.
Kirchmann, W., preparation and estimation of amines, i, 620.
—— improved method of obtaining nicotine, conine, and sparteine, i, 716.
Klein, P., gypsum crystals from Sütel, i, 582.
Klien, G., preparation of monochlorodiethoxyl-ethane, i, 291.
—— action of sodium ethylate on trichloracetic acid, i, 290.
Klimenko, sarcolactic acid, ii, 882.
Klinger, H., thialdehydes, ii, 305.
—— action of phosphorus pentachloride on phenyl- and paratolyl-oxamethane, i, 710.
Klippert, L., paraxylenedicarbonic acid, i, 468.
Klobukowski, W., azonaphthalene, ii, 623.
—— a method of estimating the halogens in organic compounds, ii, 225.
—— rufigallic acid, i, 84; ii, 618.
Kloos. See Streng.
Knecht, W., vapour-density determinations, ii, 570.
—— vapour-density of piperonal, ii, 894.
v. Knieriem, the excrements of poultry, ii, 792.
Knop, A., pachnolite and cryolite, ii, 281.
Knuth, P., on a tribromobenzenesulphonic acid, ii, 466.
Koehler, H., and A. Michaelis, isophosphophenyl sulphide, ii, 449.
—— —— phenylphosphine and phosphobenzene, ii, 450.
—— —— phosphenylic ether, ii, 449.
Koenig, G., zircon in the amazon-stone of Pike's Peak, Colorado, ii, 720.
—— the colouring matter of amazon-stone from Pike's Peak, Colorado, ii, 720.
—— hydrotitanite, a new mineral, ii, 173.
—— pachnolite and thomsenolite, ii, 119.

Koenig, G., tantalite from Yancey county, N. Carolina, ii, 281.
—— Goldsmith's hexagonite, a variety of tremolite, ii, 720.
Koenig, W., amidophthalic acid, ii, 336.
Koerner, G., constitution of veratric acid and veratrol, i, 88.
Koerner, W., and G. Monselise, two benzenedisulphonic acids and their relations, i, 79.
Kohlrausch, F., electric conducting power of water, i, 429.
—— the electric conductivity of acids in aqueous solution, ii, 104.
Kolbe, H., hydrazine and its compounds, ii, 457.
—— preparation of hydriodic acid, ii, 109.
Kommrath, H., chemical affinity, i, 165.
—— on the theory of chemical affinity, ii, 403.
Kopfer, F., use of platinum in the ultimate analysis of carbon compounds, i, 228.
Kopp, A., on the so-called *Resina Guaiaci aromatica* v. *odorata*, i, 716.
——transformation of the three bromocinchonines into the corresponding oxybases, i, 323.
Koppenhauer, W. F., volumetric estimation of phenol, i, 746.
Kopper. See Schmidt, E.
Korschelt, determinations of phosphorus in pig iron and iron ores, ii, 800.
Kosmann, C., study of the ferments contained in plants, i, 488.
—— studies on glycerin, cellulose, and gum. Change of glycerin into glucose, ii, 876.
Kraemer, C., separation of manganese from iron, ii, 805.
Kraemer, G., and M. Grodzki, methods of estimating methyl alcohol in the manufacture of colouring matters, ii, 229.
—— —— researches on crude wood spirit, ii, 291.
Krafft, F., the oxychlorination of benzene, ii, 748.
—— reactions of certain fatty bodies under energetic chlorination, ii, 726.
Kramers, J. G., decomposition of chlorobenzene at a red heat, ii, 885.
—— chlorination of diphenyl, ii, 858.
—— decomposition of phenol at a red heat, ii, 613.
Krestownikoff, G., decomposition of ethyl isosuccinate by heat, ii, 442.
Kretzschmar, A., action of acetyl chloride and of benzoyl chloride on certain amides, i, 614.
Krey, O., chlorinated acetals and some derivatives, i, 295.
Krüger, F., fluorescin as an indicator in titration, i, 341.
—— isomeric sulphine compounds, i, 186.
Krug, G., preservation of wood, ii, 244.
Kruse, analysis of roots of *Filix mas*, i, 336.
Krusemann, H. D., reduction of levulose, i, 293.
Kühnemann, G., organic constituents of barley and malt, i, 224.
Kultz, E., on the influence which tying the *ductus choledochus* exerts upon the amount of glycogen in the liver, i, 221.
Kurbatow. See Beilstein.

L.

Ladenburg, A., on ammonium compounds, ii, 570, 754.
—— on benzene formulæ, ii, 747.
—— condensation in the ortho-series, i, 302; ii, 752.
—— constitution of oxythymoquinone, ii, 891.
Ladenburg, A., and O. Struve, on the quantivalence of nitrogen, ii, 838.
Lagermark, H., and A. Elketoff, action of sulphuric acid on acetylene, ii, 583.
Lambert, C., obituary notice of, i, 505.
Lamy, A., the present state of the sugar industry in France, and a few experiments on the use of lime in the clarifying process, i, 116.
Landolph, F., boron fluoride as a dehydrating agent in organic chemistry, ii, 863.
Landolt, H., use of the magic lantern in chemical demonstrations, i, 683.
Lang, J., derivatives of the bile acids, i, 481.
Lapraik. See Russell.
Laptschinsky, M., chemistry of the crystalline lens, i, 222.
Larocque, recovery of tin from scraps of tinned iron, ii, 239.
v. Lasaulx, A., mineralogical and crystallographical contributions (continuation), i, 53.
Laspeyres, H., chemical constitution of leadhillite, ii, 413.
—— nickel ores, i, 581.

Laspeyres, H., polydymite, a new mineral, ii, 858.
—— saynite, not a distinct mineral, but a mineral mixture, ii, 858.
—— the crystal form of the strontianite of Hamm, Westphalia, ii, 857.
Latschinoff, M., oxidation of cholesterin by potassium permanganate, ii, 781.
Laubenheimer, A., orthodinitro-compounds, i, 594.
Laufer, E., on epichlorhydrin, i, 291.
Lauth, C., Paris sewage, ii, 524.
Lawrinowitsch, G., pinacone and pinacolin from methylethylketone, ii, 427.
—— on an 8-carbon pinacolin, ii, 306.
Le Bel, J. A., absence of rotatory power in iodide of triethyl-methyl-stibine, ii, 734.
Le Chatelier, H., the salts of the Algerian marshes, ii, 176.
Lechartier, G., and F. Bellamy, action of antiseptic and toxic vapours on the fermentation of fruits, ii, 507.
—— presence of zinc in the bodies of animals and plants, ii, 504.
Lecoq de Boisbaudran, crystals of gallium, i, 442.
—— physical properties of gallium, i, 48.
—— new process for the extraction of gallium, i, 48.
—— reactions of gallium, i, 167.
Ledderhose, G., glycosamine hydrochloride, i, 64.
Ledebur, effect of hot air on the blast furnace process, ii, 239.
Leeds, A. R., zinc hydride.—Reduction of silver nitrate by hydrogen, i, 282.
—— new method of estimating ferrous oxide in silicates which are insoluble in the ordinary mineral acids, ii, 650.
Lefort, J., and F. Wurtz, preparation and composition of emetine, ii, 628.
Legrip and Petit, extraction of caffeine, ii, 500.
Lehmann, A., note on ultramarine, i, 167.
Leitzenmayer, O., a correction relating to the preparation of glycol, i, 293.
Lemoine, G., dissociation of gaseous hydriodic acid in presence of an excess of one of its elements, ii, 828.
Lenz, W., iodobenzene-sulphonic acid, ii, 770.
Lepage, method of testing for impurities in potassium iodide, i, 344.
v. Leppel, F., spectroscopic reactions of magnesium salts, i, 676.
Lermontoff, Julie, preparation of trimethylene bromide, i, 59.
Lescoeur, H., acid acetates, ii, 428.
—— purification of valeric acid, i, 589.
Leube, W., employment of compressed air in filtering solutions, i, 270.
Levesie, O., composition of coffees, i, 752.
Lévy, A., estimation of ammonia in the air and rain-water of Montsouris, ii, 509.
—— gravimetric determination of atmospheric ozone, ii, 916.
Lévy, A. M., origin of crystalline rocks, i, 57.
—— structure and mineralogical composition of variolite from Durance, ii, 412.
Lewis, W. G., glaucodote, ii, 855.
Ley, N., oxidation of oxyacids, ii, 309.
Lichtenstein, M., obituary notice of, i, 506.
Lieben, A., and C. Janecke, normal caproic acid, normal hexyl alcohol, and normal œnanthylic acid, ii, 879.
Liebermann, C., studies in the anthraquinone group, i, 609.
—— brazilin, ii, 193.
—— constitution of oxythymoquinone, i, 463; ii, 476, 891.
—— researches on the naphthalene group, i, 597.
Liebermann, C., and F. Giesel, reduction-products of quinizarin, ii, 494.
Liebermann, C., and Topf, anthranol, i, 86.
Liebermann, C., and M. Waldstein, emodin from the bark of *Rhamnus frangula*, i, 477.
Liebermann, L., researches on chlorophyll, ii, 208.
—— detection of magenta in wine, ii, 939.
—— metanitro- and metamido-benzacetic acids, ii, 617.
—— nitrobenzoic acids, ii, 782.
—— solution of sulphur in acetic acid, ii, 276.
Lill and Sturm, iron analysis, ii, 224.
Liman, C., conversion of carbonylhæmoglobin into oxyhæmoglobin, ii, 346.
Limpricht, H., benzene-sulphonic acid and its derivatives, i, 595.
—— action of bromine on silver benzenesulphonate and metabromobenzenesulphonate, ii, 459.
—— on the replacement of bromine and sulphoxyl by hydrogen in the benzenesulphonic acids, and on the orthobenzenesulphonic acids, ii, 191.
Linderos, F., some constituents of *Adonis vernalis*, i, 96.

Lindo, D., tests for carbolic and nitric acids, ii, 919.
—— action of sulphuric acid and oxidising agents on morphine and its salts, ii, 906.
Linnemann, E., behaviour of sodium acrylate with fused potash, ii, 735.
—— the inability of propylene to combine with water, ii, 729.
Lippmann, E., and J. Hawliczek, artificial oil of bitter almonds, i, 315.
—— —— nitrobenzoyl, i, 315.
Lissenko, W., formation of phosphonium iodide, i, 46.
Livache, A., gases in the tissues of fruits, ii, 913.
v. Loesecke-Hildburghausen, composition of eatable mushrooms, i, 338.
Loew, Oscar, action of cyanogen on albumin, ii, 907.
—— apparatus for oxidation, ii, 275.
—— pyrogallol, ii, 477, 890.
Loewe, J., solubility of silk in an alkaline glycerin-copper solution, ii, 379.
Loewenthal, J., estimation of tannin, i, 745.
Lommel, E., fluorescence, i, 676.
Lorbisch, W. F., chemical investigation of a case of cystinuria, ii, 101.
Lossen, W., the structural formula of hydroxylamine and its amidated derivatives, ii, 328.
Lossen, W., and J. Zanni, ethers of hydroxamic acids, ethylhydroxylamine and methylhydroxylamine, i, 188.
Louguinine, thermo-chemistry of aniline and other bodies of the same group, ii, 568.
—— thermo-chemistry of the substituted anilines, ii, 696.
Louguinine. See also Berthelot.
Lound, L., effects of heat on cane-sugar in aqueous solution, i, 450.
de Luca, S., crystallised lead carbonate formed on objects found at Pompeii, ii, 843.
—— essence of *Achillea Ageratum*, i, 326.
Lucas, L. A., obituary notice of, i, 505.
Lucius. See Meister.
Luck, E., a new indicator for titrating alkalis and acids, ii, 640.
Luedecke, O., the glaucophane and glaucophane-bearing rocks of the Island of Syra, ii, 171.
Lunge, G., estimation of nitrous and nitric acids, ii, 642.
—— denitrification of nitrous sulphuric acid by sulphurous acid, ii, 944.
—— retardation of chemical reactions by indifferent substances, i, 42.
de Luynes, V., decomposition of glass, ii, 165.

M.

Mackenzie, J. J., absorption of gases by saline solutions, ii, 833.
Mactear, James, regulation of the escape of sulphur gases in the manufacture of sulphuric acid, ii, 814.
Magnier. See Saintpierre.
Magnier de la Source, L., determination of the residue of wine, i, 752.
Main, P. T., a new and accurate method of determining boiling points with small quantities of liquid, i, 680.
Maklis, C., Will and Varrentrapp's method for determining nitrogen, ii, 917.
Malissi. See Chiappe.
Mallett, J. W., fluid contained in a cavity in fluorspar, ii, 144.
Manetti, L., and G. Musso, estimation of matter precipitated from milk by rennet, ii, 940.
—— —— an error in the estimation of fat in milk and in milk-products, ii, 941.
Margottet, J., metallic selenides and tellurides, ii, 570.
Marignac, C., specific heat of saline solutions, i, 31.
Markoe, G. F. H., new method of preparing phosphoric acid, i, 683.
Markownikoff, W., acetone in urine, i, 101.
—— normal oxypyrotartaric acid (glutanic acid) and its anhydrides, i, 63.
—— the isomeric pyrotartaric acids, i, 61.
—— determination of theine in tea, i, 110.
Martin, N. H., note on diphenylamine as a test for nitric and nitrous acids, ii, 918.
Mascazzini, A., and J. G. Parodi, assay of zinc ores, ii, 221.
—— —— see also Parodi.
Maschke, O., Böttger's sugar test, ii, 930.
Masing, E., alkaloïds of celandine (*Chelidonium majus*), i, 477.
—— estimation of veratrine and physostigmine, ii, 367.
Maskelyne, N. S., the pitted surface of meteorites, i, 180.
—— see also Russell.
Maumené, J., observations respecting a dextrogyrate acid in wine, i, 456.
—— products of fermentation in the refuse of Paris, ii, 915.
Maviné, W., taxine, a poisonous alkaloïd contained in the leaves and seeds of *Taxus baccata* (L.), i, 476.
Mayer, A., dependence of plant-respiration upon temperature, i, 334.

Mazzara, G., a nitro-derivative of para-oxybenzoic aldehyde, ii, 781.
—— nitro-derivatives of salicylic aldehyde, i, 597.
McCreath, A. S., estimation of carbon in iron and steel, ii, 927.
Medicus, L., decomposition of glyoxalyl urea, ii, 599.
—— decomposition of uroxanic acid, i, 69.
Mehu, C., on the non-existence of mucus in urine, ii, 633.
Meidinger. See Hell.
Meissner, F., polybasic compounds of the acids of nitrogen, i, 296.
Meister, Lucius, and Bruning, estimation of pure anthracene in crude anthracene, i, 228.
Mendelejeff, D., origin of mineral oils, ii, 283.
Mendelejeff, D., and V. Hemilian, compressibility of gases at pressures less than one atmosphere, i, 164.
Mendelejeff, D., and N. Kajander, coefficient of expansion of gases, i, 31.
Mendelsohn. See Tiemann.
Menschutkin, N., experiments on etherification, ii, 865.
—— tartronamic acid, ii, 323.
Mercadante, M., absence of leucine in the products of germination of the Graminaceæ, i, 105.
—— modification of starch in vegetables, i, 104.
Mercier, M., a process of solidification of carbon disulphide, ii, 419.
Merget, A., functions of the leaf and stomates in promoting exchange of gases between plants and the atmosphere, ii, 634.
—— on exchanges of gas between plants and the atmosphere, ii, 350.
v. Mering, formation of glycogen in the liver, i, 728.
Merrick, J. M., chloride of cobalt-ammonium, ii, 709, 846.
Mertens, K. R., nitro-compounds of dimethylaniline, ii, 605.
Merz, G., testing of fatty oils, ii, 228.
—— testing of olive oil, ii, 228.
—— volumetric estimation of aluminium sulphate and of alums, ii, 355.
Merz, V., and G. Ruoff, action of aromatic substances on excess of iodine chloride, i, 706.
Merz, V., and W. Weith, benzyl- and dibenzyl-acetic acids, ii, 617.
—— —— brominated derivatives of hexane, ii, 867.
—— —— carbodiphenylimide and phenylparatolylcarbimide, ii, 886.
Merz, V., and W. Weith, derivatives of dimethylaniline, ii, 603.
—— —— naphthalene-derivatives, ii, 898.
—— —— preparation of aromatic nitrils, ii, 602.
—— —— reactions of dimethylaniline, ii, 886.
Meunier, Stanislas, composition and origin of the diamond-bearing sand from Du Toit's Pan, S. Africa, ii, 280.
—— —— experimental researches on natural sulphides, ii, 708.
—— experiments and observations on vitreous rocks, i, 57.
—— devitrification of vitreous rocks, i, 448.
v. Meyer, E., constitution and properties of oxidised platinum sulphide, ii, 114.
Meyer, R., behaviour of cuminol with potash, ii, 333.
Meyer, V., ammonium-compounds, ii, 190.
—— lecture experiment to show the increase of weight on burning a taper, 437.
—— triethylamine derivatives, ii, 877.
—— triethylbenzylammonium iodide, ii, 606.
—— a method of determining the vapour-densities of substances boiling at high temperatures, i, 34.
Meyer, V., J. Barbieri, and F. Foster, molecular transformation, ii, 285.
Meyer, V., and C. Petri, ethylterpene, ii, 626.
Michael, A., action of potassium sulphydrate on chloral hydrate, i, 188.
—— preparation of paramidobenzoic acid, ii, 615.
Michael, A., and A. Adair, aromatic sulphones, ii, 613.
Michael, A., and S. Gabriel, action of dehydrating agents on anhydrides, ii, 486.
Michael, A., and F. H. Norton, diamidosulphobenzidedicarbonic acid, ii, 619.
—— —— triiodoresorcin, i, 463.
Michaelis, A., aromatic arsenic-compounds, i, 311; ii, 452.
—— phosphodiphenyl chloride and derivatives, ii, 453.
Michaelis, W., valuation of cements, ii, 801.
Michaelis. See also Köhler.
Michler, W., and C. Dupertuis, synthesis of ketones from dimethylaniline, ii, 333.
Michler, W., and A. Gradman, syn-

thesis of organic acids and ketones by means of chlorocarbonic acid, ii, 334.
Mignon and Rouart, note on a manometric apparatus, 437.
Millet. See Curie.
Millot, a crystallised dicalcic phosphate, i, 689.
Miquel, P., action of alcohols of the fatty series upon benzoyl-sulphocarbimide, i, 709.
—— new compounds of thiocyanic acid, ii, 869.
—— silicon thiocyanate, i, 705.
—— stains produced by thiocyanic acid, i, 457.
Mitchell, H. W., note on litmus, i, 214.
Mitscherlich, A., the point of combustion, i, 42.
Moeller, J., myall wood, i, 119.
Moeslinger, W., essential oil of the fruit of *Heracleum sphondylium*, ii, 425.
Mohr, F., on Stolba's method for the alkalimetric estimation of phosphoric acid, ii, 800.
Moisson, H., on the oxides of iron, ii, 573.
Moldenhauer, C., pure commercial potassium cyanide, ii, 423.
Moleschott, J., action of bile on peptones, ii, 347.
Monselise. See Körner.
de Montgolfier, J., oxidation of camphor, ii, 903.
—— rotatory power of the camphols, i, 478; ii, 626.
—— patchouli camphor, i, 478.
Montholon. See Naudin.
Morawski, Th., the manganese ores of Bukowina, ii, 175.
Morel, C., tetrachloride of carbon and its use as an anæsthetic, ii, 912.
Morgern, W., determination of sulphur in coal, ii, 217.
Morizzia, A., the natural poison of the human corpse, i, 331.
Morton, H., thallene, ii, 422.
Moser, J., composition of yam-tubers, ii, 795.
—— the spectra of chemical compounds, ii, 688.
—— the Torricellian vacuum, ii, 163.
Mueller, A., preparation and new reactions of acetylphenylnitrosamine, ii, 885.
Mueller, D., a contribution to Bastian's archibiosis, ii, 632.
Mueller, F. G. C., specific weights of gases, i, 431.
—— synthesis of water; lecture experiment, i, 438.
—— rise of temperature occasioned by passing steam into saline solutions, and on the temperature of the vapours from saline solutions, i, 430.
Mueller, F. G. C., on the temperature of steam under normal conditions, ii, 274.
Mueller, Oswald, an isomeride of dibromanthracene, i, 86.
Mueller, P., utilisation of wine-lees, ii, 952.
Muentz, A., and E. Aubin, optical properties of mannite, i, 294, 589.
Muentz, A., combination of tannin with vegetable tissue, ii, 350.
Muentz. See also Schloesing.
Muir, M. M. P., action of water and of saline solutions upon lead, i, 690.
—— bismuth-compounds, i, 24, 645; ii, 40, 128.
—— detection of small quantities of bismuth, ii, 45.
—— volumetric estimation of bismuth, i, 658; ii, 674.
—— modification of Hofmann's vapour-density apparatus, ii, 140.
—— solvent action of various saline solutions on lead, i, 660.
Mulder, E. B., β-amidopropionic and β-guanidopropionic acid, ii, 311.
Munk, Ira, on the form of combination of urea in the liver, i, 730.
—— diastatic ferments, ii, 351.
—— peptone-forming ferment in saliva, ii, 347.
—— thiocyanates in urine, ii, 347.
Musso, G., estimation of nitrogen in milk, &c., and its educts, ii, 233, 941.
Musso. See also Manetti.
Muter, J., analysis of butter, 233.
—— detection of castor oil and other fixed oils in balsam of copaiba, ii, 374.
—— copper in vegetables, 511.
—— mares' milk, ii, 520.
—— simple method of estimating the value of commercial samples of salicylic acid, and of detecting it in milk and similar organic liquids, ii, 227.
Mutschler, L., cyclamin, primulin, and primula-camphor, ii, 903.

N.

Nagajosi Nagai. See Tiemann.
Nagelvoort, T. B., ammonium sulphomolybdate as a test for alkaloïds, ii, 230.
Nasse, Otto, physiology of the carbohydrates, ii, 503.

Naudin, L., and F. de Montholon, decomposition of potassium cyanide, zinc cyanide, and potassium formate in carbonic acid, air, and pure hydrogen, i, 66.
Naumann, A., behaviour of bromine and sulphur bromide to hydrogen sulphide, i, 272.
—— decomposition of crystallised potash-alum at 100°, ii, 166.
de Negri, A. and G., colouring-matter of *Velella limbosa*, ii, 791.
Neison. See Tuson.
Nemes. See Fleischer.
Nencki, M., the action of monochloracetic acid on thiocyanic acid and its salts, ii, 872.
—— constitution of guanamine and cyanuric acid, i, 299.
—— leucine, ii, 596.
Neubauer, C., determination of dextrose and levulose by an indirect method, ii, 641.
—— preparation of chemically pure grape-sugar, i, 705.
—— concentration of wine-must by cold, ii, 793.
—— detection of wines sophisticated with grape-sugar, ii, 939.
—— optical behaviour of wines, &c., ii, 521.
Neville, R. H. C., a compound of chromium and arsenic, i, 283.
Nevolé, M., derivatives of ethylvinyl, ii, 867.
—— action of water on glycols, i, 58.
Niederist, G., action of water on the haloïd compounds of the alcohol-radicles, ii, 422.
Nies, A., strengite, a new mineral, ii, 410.
Nietzki, R., amidazo-compounds of the tolyl series, ii, 453, 767.
—— aniline-black, i, 91.
—— behaviour of aniline-derivatives when passed through red-hot tubes, ii, 447.
—— a new glucoside in the flowers of *Cichorium Intybus*, i, 477.
—— paradiamidotoluene and toluquinone, ii, 475.
—— presence of sulphocyanates in commercial soda, i, 353.
Nilson, L. F., separation of arsenic from antimony by Bunsen's method, ii, 922.
—— chloroplatinites, ii, 277.
—— platinonitrites, ii, 115.
—— action of iodine and alcohol on the platinonitrites, ii, 710.
—— a new platinonitrosic acid, ii, 711.
—— the quantivalence of the rare earth-metals, i, 49.
Noelting, E., laws of substitution in benzene, ii, 324.
Noelting, E., and J. Boas-Boasson, researches on the aromatic amines, ii, 885.
—— —— monomethyl-aniline, ii, 755.
Norton. See Michael.

O.

Obérlin and Schlagdenhauffen, on the essential oil of Angustura bark, ii, 932.
Oertmann. See Finkler.
Oglialoro. See Paternò.
O'Keeffe. See Simpson.
Olivier, J., a curious method of producing heat, ii, 274.
Orlowski, A., action of bromine on succinic acid, ii, 883.
—— action of silver cyanide on dibromethyl bromide, ii, 869.
—— ethenyltricarbonic acid, ii, 883.
Orth, A., the fundamental scientific principles of geognosy, ii, 214.
Ost, H., polybasic acids derived from phenol and carbon dioxide, ii, 485.
Ott, Ad., the refining of crude petroleum, ii, 376.
Otto, R., preparation of benzene hydrosulphide from benzene-sulphinic acid. New method of converting benzene disulphide into benzene-hydrosulphide, ii, 749.
Otto, R. See Backunts, Beckurts and Schiller.

P.

Palmeri, P., chemical examination of twelve colours found at Pompeii, i, 111.
Papasogli, G., researches on essence of turpentine, i, 592.
Papasogli, G., and A. Poli, chromic acid, a test for malic acid, ii, 807.
Pape, A., some reactions of vegetable poisons, i, 749.
Parodi, G., and A. Mascazzini, estimation of zinc and lead in minerals, ii, 804.
Parry, G., obituary notice of, i, 507.
Parveno, A. G., volumetric estimation of manganese, ii, 924.
Pasteur, L., supposed action of hops as a ferment, ii, 352.
—— note on Weddell's paper on the

substitution of cinchonidine for quinine, ii, 344.
Paternò, E., note on sordidin, ii, 780.
—— usnic acid, i, 89.
Paternò, E., and A. Oglialoro, a new acid (atranoric acid) from *Lecanora atra*, ii, 786.
—— —— picrotoxin, i, 719; ii, 790.
Paternò, E., and P. Spica, cumol, i, 593.
—— —— action of allyl iodate and zinc on ethyl oxalate, i, 60.
—— —— propyl-benzene and propylphenol, i, 707.
—— —— synthesis of propyl-isopropylbenzene, i, 77.
Paterson, G., composition of an iron deposit, i, 355.
Paterson, W. M., Scottish tripolite, ii, 174.
Patrouillard, L., preparation and fermentation of magnesium acetate, ii, 588.
Pattinson, deposition of carbon and other bodies from the gases of blast-furnaces, ii, 375.
Pattinson, T., an abnormal sample of new milk, i, 232.
Pattinson and Stead, estimation of barley in oatmeal, i, 348.
Paul, B. H., the pharmacopœia test for quinine sulphate, ii, 642.
Paul, B. H., and Kingzett, C. T., presence of metallic compounds in alimentary substances, ii, 912.
Pauloff, D., action of organo-zinc compounds on the chlorides of acid radicles, ii, 310.
Pauly, C., benzenedisulphinic acid, i, 312.
—— ammonia-derivatives of benzophenone, ii, 614.
—— formation of sulphinic acids of the fatty group from the chloranhydrides of the sulphonic acids, ii, 734.
Pauly, C., and R. Otto, new formations of benzene- and toluene-dioxysulphides, i, 463.
Pavy, F. W., the physiology of sugar in relation to the blood, ii, 909.
Pawlow, D., action of acid chlorides on organo-zinc compounds, ii, 732.
—— formation of tertiary alcohols, i, 57.
Pecile, Domenico, guanine in pigs' urine, i, 330.
Peligot, E., action of boric acid and of borates on vegetation, i, 223.
—— composition of ancient glass and crystal, i, 234.
Pellagri, G., action of light and of carbonic acid on potassium iodide, ii, 706.
Pellagri, G., new reaction of morphine, ii, 808.
—— phyllocyanin as a reagent, i, 109.
Pellet, H., several methods of chemical analysis, i, 226.
—— estimation of chlorine by silver nitrate and potassium bichromate in presence of other salts, ii, 916.
—— estimation of ferric oxide and alumina in presence of phosphoric acid, ii, 223.
—— precipitation of phosphoric acid by ammonia, in presence of lime, baryta, alumina, and ferric oxide, i, 578.
Pellet, H., and A. Allart, volumetric estimation of tin, ii, 803.
Pellet. See also Champion and Jean.
Penfield, S. L., chemical composition of triphyllite from Grafton Co., New Hampshire, ii, 714.
v. Perger, H. R., action of ammonia on alizarin, ii, 342.
Perier, the insoluble matter from opium extract, i, 720.
Perkin, W. H., note on some new derivatives of anthracene, i, 209.
—— dibromacetic and glyoxylic acids, ii, 90.
—— formation of coumarin and of cinnamic and other analogous acids from the aromatic aldehydes, i, 388.
—— on some hydrocarbons obtained from the homologues of cinnamic acid, and on anethol and its homologues, ii, 660.
Perrenoud, P., metanethol camphor, ii, 480.
Perret, G., new method for the extraction of resin of scammony, ii, 950.
Perrot, E., estimation of sugar by standard solutions, i, 744.
Peterson, H., preparation of lithium, cæsium, and rubidium from lepidolite, ii, 706.
Petit. See Legrip.
Petri. See Meyer.
Pettersson, O., the atomic weight of selenium, i, 44.
—— molecular volumes of sulphates and selenates, i, 267, 437.
Pfaundler, L., the application of the principle of dissimilar molecules to the explanation of the phenomena of supersaturated solutions, super-fused bodies, spontaneous explosions, and the gradual crystallisation of amorphous bodies, i, 435.
—— on the soft and semi-fluid states of aggregation, regelation, and recrystallisation, i, 433.
Pflüger, E., influence of respiration on the metamorphosis of tissue, i, 482

Pflüger, E., influence of temperature on the respiration of cold-blooded animals, i, 327.
Philipp, T., constitution of ultramarine, i, 686.
Philipps, L., a homologue of caffeine, i, 93.
Phipson, T. L., nitrosalicylic acid, ii, 617.
—— separation of nickel and cobalt, ii, 925.
—— salicylol, ii, 481.
—— the tripolite of Barbadoes, i, 177.
—— observations on some xanthates. Separation of nickel and cobalt, ii, 597.
Picard, P., urea in the blood, i, 329, 486.
Piccard, J., chrysin, tectochrysin, and higher homologues, ii, 342.
Piccard, J., and A. Humbert, resorcindisulphonic acid, i, 312.
—— —— resorcintrisulphonic acid, ii, 340.
Pictet, R., application of the mechanical equivalent of heat to the study of volatile liquids. Simple relations between the latent heats, atomic weights, and tensions of vapours, i, 162.
Pierre, I., effect of coating wheat with oil, ii, 954.
—— sugar in the leaves of beet, i, 487.
Piesse, C. H., copper in preserved green peas, 511.
—— See also Wright.
v. Pieverling, L., myricyl alcohol and some of its derivatives, i, 586.
—— selenium-compounds of ethyl, i, 290.
Pinchon, A., testing of oils, i, 348.
Pinner, A., hexyl chloral, ii, 586.
Pinner, A., and F. Fuchs, contributions to the history of chloral, ii, 584.
Pisani, F., bastite from Elba, ii, 719.
—— crystallised barium silicate, i, 442.
—— a lead antimonite from Arnsberg, Westphalia, ii, 855.
—— description of several minerals: triphane, tephroite, hydrotephroite, pharmacosiderite, ii, 850.
—— a sulphantimonide of lead found at Arnsberg, Westphalia, i, 56.
—— chemical composition of turnerite, ii, 715.
Pisati, G., elasticity of metals at different temperatures, i, 38; ii, 162, 700.
—— elasticity of torsion, i, 39.
Pizzi, A., preparation of pure manganese chloride from chlorine residues, ii, 169.
Planchard, E., formation of natural sulphuretted waters, i, 704.
Planté, G., electro-silicic light, ii, 270.
Plath, H., madder colours, ii, 496.
—— xanthopurpurin, i, 87.
Plowright. See Hamlet.
Podolinski, S., the albuminous ferment of the pancreas, i, 103.
Poitearn, A., on certain photographic processes, ii, 942.
Pollacci, phosphorus as a test for iodates, i, 344.
Ponndorf, A. L., hypophosphorous acid, i, 275.
Popoff, A., and Vassileff, identity of Helm's oxyheptoic acid with Ley's acid, ii, 882.
Popper, R., quantitative analysis of a mixture of carbon compounds, ii, 929.
—— quantitative determination of precipitates without washing and drying, ii, 638.
Portes, L., physiological relations of asparagin, ii, 636.
Post. See Witting.
Potilizin, experiments on the displacement of chlorine by bromine from its compounds with the elements of the 1st, 2nd, 3rd, 4th, and 8th groups of Mendelejeff's natural system, ii, 109.
Power, F. B., note on a reaction of emetine, ii, 933.
Prescott, A. B., action of hydrochloric acid upon metallic sulphates, ii, 840.
—— laboratory notes of quinine, ii, 933.
Preston, V., dyeing with aloes, ii, 378.
Procter, H. R., some methods of estimating tannins, ii, 807.
Proskauer, B., and E. Sell, action of bromine on phenyl sulphocyanate, i, 67.
Prschibitesk, S., synthesis of *a*-oxybutyric acid, i, 60.
Pruen, S. T., and G. Jones, analysis of carbonates by means of the carbometer, ii, 38.
Prunier, L., acetic and butyric ethers of quercite, ii, 877.
—— action of heat on quercite, i, 450.
Puchot, E., the iodine and starch reaction, i, 107.
Puls, J., metallic glycerides, ii, 302.
Puluj, J., diffusion of vapours through porous cells, ii, 835.
Pusch, T., sodium-potassium citrate, ii, 883.

Quincke, G., glass impervious to gases, ii, 165.

R.

Raab, A., on certain derivatives of cumin aldehyde, ii, 894.
Radziszewski, B., hydrobenzamide, amarine, and lophine, ii, 887.
—— on certain phosphorescent bodies, ii, 345.
—— reply to the remarks of E. Chevreul respecting the phosphorescence of organic bodies, ii, 863.
Rammelsberg, C., aerinite and ginilsite, ii, 412.
—— atomic weights of the metals of the cerium group, i, 282.
—— composition of the phosphites, i, 277.
—— composition of speiss-cobalt, ii, 176.
Ramsay, W., dehydration of hydrates by the time method, ii, 395.
Ramsperger, G., the detection of adulterations of *Oleum theobromae*, ii, 931.
Raoult, F., and H. Breton, detection of zinc and copper in the human body, ii, 928.
vom Rath, G., a chalcedony-amygdaloïd filled with water, ii, 860.
—— a new combination of Elba calcite, and a rare development of a crystal of calcite from Oberstein, ii, 170.
—— gold from Vorôspatak, ii, 279.
—— pyrargyrite from Andreasberg, ii, 173.
—— rutile from the Binnenthal, after specular iron (iron-glance), ii, 856.
—— the syenite mountains of Ditro, ii, 172.
—— the tridymite-bearing andesite of Gerecses, ii, 280.
Rayman, B., orthotoluic aldehyde, ii, 894.
Reboul, E., synthesis of the acids $C_nH_{2n-2}O_2$ and $C_nH_{2n-4}O_2$ (allyl- and diallylacetic acids), ii, 593.
Reboul, E., and E. Bourgoin, conversion of normal pyrotartaric acid into dibromopyrotartaric and dibromosuccinic acid, ii, 592.
—— —— electrolysis of ordinary pyrotartaric acid, ii, 442.
—— —— normal propylene, ii, 728.
Reboux, M., note on yellow amber, ii, 903.
Regensburger, M., action of sulphur on the excretion of sulphuric acid in the urine, ii, 911.
Regnard, P., presence of free ammonia in cast steel, ii, 169.
Reichardt, E., detection of glycerin in wine, ii, 939.
—— differences observed in unadulterated milk, ii, 373.
—— investigations on food, ii, 517.
—— nutritive value of the cellular tissue of plants, ii, 347.
—— on the pectin group, ii, 502.
Reichl, C., some new phenol colours, i, 310.
Reimer, K., action of carbon tetrachloride on phenol in alkaline solution, i, 77.
Reimer, K., and F. Tiemann, action of chloroform on aromatic cyanides in alkaline solution, i, 83.
Reinders, G., action of sea-water upon land, i, 106.
—— composition and nutritive and manurial value of rapok cake, i, 105.
Reinke, O., on a tribromobenzenesulphonic acid, ii, 461.
Reischauer, C., beer analyses, ii, 953.
Remsen, Ira, phosphorus oxychloride, i, 685.
Renard, Ad., action of electrolytic oxygen on glycol, ii, 300.
van Renesse, J. J., action of potassium cyanide on the isomeric orthonitrometabromobenzoic acids, i, 310.
—— action of silver nitrite on benzyl iodide, i, 310.
Rennard, E., separation of the alkaloïds, ii, 230.
Reverdin, F., chrysolin, a new yellow dye derived from resorcin, ii, 889.
Reyman, B., condensation-products of the ortho-homologues of benzene, i, 459.
Reynolds, J. E., composition of lievrite as determined by Early's method, ii, 716.
Rice, C., new formation of iodoform, bromoform, &c., ii, 423.
Riche, A., estimation of manganese, nickel, zinc, and lead, ii, 924.
—— on the frequent occurrence of cupric acetate in vinegar and on the estimation of copper, ii, 927.
Richet, C., acidity of human gastric juice. Observations on digestion made through the agency of a gastric fistula, ii, 631.
—— the free acids of the gastric juice ii, 910.
v. Richter, V., researches on ketonic acids, ii, 439.
Riley, E., estimation of manganese in

Spiegeleisen and of manganese and iron in manganiferous iron ores, ii, 1.
Ripping, A., artificial laurel-water, ii, 241.
Rischawi, L., experiments on the respiration of plants, i, 331.
Ritter. See Feltz.
Ritthausen, H., new method of analysis for milk, and a new carbohydrate in milk, ii, 519.
Robins, C. A., *Gelsemium sempervirens*, ii, 344.
Robinson, H. See Dittmar.
Roemer. See Schunck.
Roscoe, H. E., on two new vanadium minerals, ii, 444.
Rosenfeld, Max, detection of free sulphur, i, 341.
Rosenfeld. See also Honig.
Rosenstiehl, A., the constitution of pseudopurpurin, ii, 495.
—— researches on pseudopurpurin: sequel to the researches on the colouring-matters of madder, ii, 625.
—— simultaneous formation of two trioxyanthraquinones, and synthesis of a new isomeride of purpurin, i, 209.
Rosenthal, G., precipitation of manganese by hydrogen peroxide, ii, 923.
Rother and Waldack, iron developers in photography, i, 756.
Rouart. See Mignon.
Ruoff, G., results of an exhaustive chlorination of aromatic substances, i, 299.
Ruoff. See also Merz.
Russell, W. J., and N. S. Maskelyne, an attempt to form double salts of silver nitrate and other nitrates, ii, 843.
Russell, W. J., and W. Lapraik, decomposition of nitric oxide by potassium pyrogallate, ii, 35.

S.

Sabanejeff, A., reduction of organic haloïd compounds by zinc and zinc-dust, ii, 728.
Sacc, M., correction relative to a communication on panification in the United States, and on the properties of hops as a ferment, i, 240.
Sacchse, R., on the function of chlorophyll, ii, 208.
—— relation between asparagin and protein, ii, 199.
—— protein crystalloïds from *Bertholletia excelsa*, ii, 200.
Sacchse, R., estimation of sugar, ii, 226.
—— xanthophyll, ii, 350.
Sachse, U., dinitrobenzenesulphonic acid, ii, 751.
Sadebeck, A., the crystallisation of the diamond, ii, 717.
Saintpierre, C., and L. Magnien, gases in the fruit of the bladder-senna, i, 105.
Salkowski, E., formation of phenol in the animal body, ii, 504.
—— phenol-forming substance in human urine, i, 330.
Salleron, M., estimation of alcohol by the temperature of ebullition, i, 346.
Salomon, G., occurrence of grape-sugar in alcohol, i, 705.
Salzer, Th., hypophosphoric acid, ii, 702.
Sandberger, F., heubachite, a natural hydrated oxide of nickel and cobalt, ii, 855.
Sansoni, M., and G. Capellini, precipitated sulphur, i, 272.
Santos, T. R., aluminous chrysophyllite from Utah, ii, 854.
—— native antimony ochre from Arkansas, ii, 853.
—— an unusual form of stibnite, ii, 854.
Sarasin. See Friedel.
Sarrazin, T., injurious effects of covering roads with pyrites residues, ii, 236.
Saytzeff, A. and M., synthesis of allyldimethyl carbinol, ii, 298.
Saytzeff, M., action of allyl iodide and zinc on ethyloxalate, i, 455.
—— synthesis of diallyl-carbinol, ii, 297.
—— diallyl-oxalic acid, ii, 738, 882.
Saytzeff and Kannonikoff, preparation of allyl iodide and of anhydrous acetic acid, ii, 730.
Schackerl, C., action of hydrochloric acid on potassium chlorate, i, 47.
Schaer, E., fluorescence of quinidine sulphate, i, 93.
Schalfeieff, cerotic acid from beeswax, i, 454.
Schiel, J., Nobili's rings on gold, i, 677.
Schiff, Hugo, acetylene-urea, ii, 885.
—— carbon disulphide as an antiseptic, i, 124.
—— a reaction of urea with furfurol, ii, 742.
Schiff, Otto, a peculiar decomposition of boric ether, i, 874.
Schiff, R., a series of compounds derived from aldehyde-ammonia, i, 313.
—— constitution of chloral-ammonia and aldehyde-ammonia, ii, 308.

Schiff, R., action of alcoholic potash on the mustard-oils (thiocarbimides), i, 68.
—— See also Fileti.
Schiller, R., and R. Otto, ethyl-benzene-sulphonate, i, 463.
—— —— action of sulphur trioxide on sulphydrates, i, 463.
—— —— experiments for preparing the thio-ethers of benzenesulphonic and paratoluenesulphonic acids, i, 469.
—— —— formation of benzene and paratoluene disulphides, i, 306.
—— —— reactions of aromatic disulphides, i, 463.
—— —— phenyl thiobenzoate and paratolyl thiobenzoate, i, 468.
—— —— preparation of benzene and paratoluene sulphydrates, i, 306.
—— —— new method of preparing benzene-sulphinic and toluene-sulphinic acids, i, 312.
Schlagdenhauffen. See Oberlin.
Schloesing, T., separation of potassium and sodium, ii, 921.
Schloesing, T., and A. Müntz, nitrification by organised ferments, ii, 215.
Schmid, E., the kaolin of the Thuringian variegated sandstone, ii, 120.
Schmidt, A., coagulation of fibrin, i, 483, 726.
—— relation of sodium chloride to certain animal fermentation-processes, i, 101.
Schmidt, E., formation of allyl-sulphocarbimide, ii, 309.
—— testing beeswax for resin, ii, 642.
—— bromoform, ii, 293.
—— crystalline form of brucine, ii, 628.
—— action of carbon oxysulphide on aqueous ammonia, ii, 307.
—— constituents of cubebs, ii, 344.
—— morphine hydriodide and hydrobromide, ii, 343.
—— polysulphydrates of strychnine and brucine, ii, 905.
Schmidt, E., and R. Koppen, veratrine, ii, 906.
Schmiedeberg, O., and E. Harnack, synthesis of muscarine and allied ammonium bases, ii, 198.
Schmitz, M., specific rotatory power of cane-sugar, ii, 876.
Schobig, Ernst, purification of hydrogen gas for analytical purposes, i, 271.
Schorlemmer, C. S., on the normal paraffins, Part II, ii, 866.
Schorlemmer. See also Dale.
Schrauf, A., the crystallographical constants of lanarkite, ii, 860.
—— new minerals from the graphite deposit of Mugrau, in Bohemia, i, 581, 859.
Schrodt, M., researches on the bones of a carnivorous animal, i, 328.
Schroeder, H., on a remarkable regularity in the volume-relations of definite series of compounds, ii, 108.
—— volume-constitution of solids, ii, 404, 698.
Schuler. See Weselski.
Schultz, G., decomposition of oil of turpentine at a high temperature, ii, 341.
Schultz, R., three dichlorobenzoic acids, ii, 781.
Schultz. See also Anschütz, Frühling, and Japp.
Schulze, E., analysis of the ash of lignite, i, 287.
—— remarks upon Sachsse and Kormann's method for the determination of nitrogen when existing in the form of amides, ii, 917.
—— formation of sulphuric acid in seedlings, i, 104.
Schulze, E., and J. Barbieri, occurrence of an amide of glutamic acid in young pumpkin plants, ii, 324.
Schulze, E., W. Umlauf, and A. Urich, the germination of lupine-seeds, i, 104.
Schumann, Otto, affinity of metals for sulphur and oxygen, ii, 704.
Schunck, E., and H. Roemer, madder colouring matters, i, 665.
—— —— munjistin, s-purpurin, and purpuroxanthincarbonic acid, ii, 788.
—— —— purpurin, ii, 624.
Schützenberger, P., action of water on the chlorides of iodine, ii, 110.
—— new derivatives of albuminoïd substances, i, 725.
—— a new derivative of indigotin, ii, 898.
Schwanert, H., dinitrotoluenesulphonic acids, ii, 470, 612.
Schwarz, Hugo, relation between tissue metamorphosis and body-temperature in amphibia, i, 327.
Schwarz, V., testing of aqueous liquids for blood, i, 754.
Schwarzer, F., halogen-derivatives of anthracene, ii, 493.
Schweitzer, P., some new acid ammonium sulphates, ii, 703.
Scurati-Manzoni, G., the action of some reagents on the principal organic colouring matters, i, 310.
—— hyposulphite of sodium (SO_2Na_2) as a reagent in the analysis of the colouring matters of dyed stuffs, i, 349.

Seegen, J., transformation of glycogen into grape-sugar by saliva and pancreatic juice, ii, 911.
Seegen, J., and Kratschmer, contributions to the knowledge of the saccharifying ferments, ii, 505.
Segura, R., solubility of mercury in water, ii, 843.
—— direct reduction of silver from its sulphide, ii, 843.
Seidler, H., laboratory gasometer, ii, 275.
Sell. See Proskauer.
Selmi, F., atropine, i, 93.
—— detection of traces of phosphoric acid in toxicological researches, i, 108.
—— modification of the process for extracting the poisonous alkaloïds from the viscera, i, 110.
—— some volatile products of the putrefaction of brain-matter, i, 730.
Senier, H., colouring matter of the petals of *Rosa gallica*, ii, 502.
Sestini, F., ethyl santonate, i, 90.
—— photosantonic acid, i, 471.
—— portable apparatus for volumetric analysis, ii, 798.
Setschenoff, absorption of carbon dioxide by blood, ii, 630.
Seuberlich, C., action of sulphuric acid upon a mixture of benzoic and gallic acids, ii, 894.
Seyms, the relation of Franklinite to the spinel group, i, 701.
Shaw, F. W., and T. Carnelley, influence of ammonium sulphide in preventing the action of various solutions on copper, i, 642.
Shenstone, W. A., note on the action of dilute nitric acid on brucine, ii, 499.
Shenstone. See also Tilden.
Shepard, C. U., the meteoric stone of Waconda, i, 290.
Sidot, M., copper phosphites, ii, 844.
—— on a phosphate of lime glass, ii, 842.
Siebold, L., copaiba testing, ii, 931.
Siemens, W., dependence of the electric conductivity of selenium on heat and light, i, 677.
Silliman, B., association of gold with scheelite in Idaho (U.S.), ii, 713.
Silvestri, O., hydrocarbons of the paraffin series found in a lava from Etna, i, 704.
Simon, E., ratio of the two specific heats of a gas, ii, 162.
Simpson, Maxwell, and C. O'Keeffe, determination of urea by means of sodium hypobromite, i, 538.
Skey, W., solubility of the alkalis in hydrous ether, ii, 706.
—— evolution of antimony from stibnite, i, 174.
—— certain chemical effects of oxidised graphite and platinum, ii, 710.
Skraup, Z. H., cyanogen-compounds of iron, ii, 598.
van Slooten, W., ash of hard carbon from coal-gas retorts, i, 355.
Smee, Alfred, obituary notice of, i, 509.
Smith, F., obituary notice of, i, 511.
Smith, J. L., carbon-compounds in meteorites, i, 288.
—— examination of American niobates or columbates, ii, 714.
—— gas-wells in Pennsylvania, i, 287.
—— two new niobates, ii, 576.
Smith, Watson, action at high temperatures of certain volatile metallic chlorides on certain hydrocarbons, ii, 551.
—— action of solutions of alkaline oxalates on the earthy carbonates, and of solutions of alkaline carbonates on the earthy oxalates, ii, 245.
Sodini, G., influence of water on the action of chlorine on iodine, ii, 276.
—— preparation of iodic acid, i, 271.
Sokoloff, N., estimation of conine, ii, 368.
—— estimation of hydrocyanic acid in the dead body, ii, 365.
Sokolowsky, N., action of bromine on acetone, i, 453.
Soldaini, A., method of preparing ferric and cupric oxides from the sulphates, so as not to obtain basic sulphates, i, 283.
—— a new reagent for the detection and estimation of glucose, i, 345.
Sonnenschein, F. L., some constituents of *Gelsemium sempervirens*, i, 97.
Sorby. See Hodgkinson.
de la Source, L. Magnier, determination of the residue of wines, i, 752.
Sorokin, synthesis of diallyl-methyl carbinol, ii, 299.
Spezia, G., the colour of zircon, ii, 856.
Spica, P., selenureas, and method of estimating the selenium in them, ii, 189.
Spica. See also Paternò.
v. Spitzer, F., eterpene (ethyl-terpene), ii, 789.
Staedel, W., and L. Rügheimer, action of ammonia on chloracetylbenzene, i, 459.

Stahlschmidt, C., chemical constitution of chloride of lime, i, 279.
—— on a new naturally occurring organic acid, ii, 620.
Stamm, L., the application of nitroalizarin to steam dyeing, ii, 950.
Stead. See Pattinson.
Steenstrup, K. J. V., the Nordenskiöld iron mass, and the occurrence of native iron in basalt, ii, 578.
Stein, S., construction of scientific instruments of rock crystal, i, 682.
Stein, W., ultramarine, i, 686.
Steinen. See Halse.
Stenhouse, J., and C. E. Groves, dinitroso-orcin and dinitro-orcin, i, 544.
—— —— gardenin, i, 551.
—— —— note on ginger, i, 553.
—— —— naphthalene-compounds, ii, 47.
—— —— picrorocellin, i, 718.
Stierlin, sublimed molybdic acid as an object for the polarising microscope, i, 691.
Stockmann, C., estimation of manganese and phosphorus in spiegeleisen, ii, 648.
—— determination of phosphorus in pig iron and iron ores, ii, 800.
—— solution of silicates, i, 340.
Stockmann. See also Doebner.
Stoddart, W., the occurrence of celestine in keuper-marls, and its influence upon the constituents of plants, ii, 281.
Stolba, F., alkalimetric estimation of magnesia, and of phosphoric and arsenic acids, ii, 355.
—— Hauer's method of disintegrating lepidolite, ii, 356.
—— silicofluorides of iron and cobalt, i, 690.
—— purification of zinc sulphate, ii, 113.
Storer, F. H., Schönbein's test for nitrates, ii, 219, 799.
Streng, A., the microscopical discrimination of nephelin and apatite, ii, 411.
Streng, A., and J. H. Kloos, the crystalline rocks of Minnesota, ii, 580, 720.
Strohl, detection of mineral acids in vinegar, i, 752.
Struever, G., the crystalline form of some derivatives of santonin, i, 472.
Struever, J., gastaldite (a new mineral), ii, 119.
Struve, R., derivatives of phenanthrene, ii, 902.
Stuckenberg, K., α-amidonitrophenol, ii, 494.
Stuckenberg, K., paranitro-orthosulphophenol, ii, 888.
—— β-diamidophenol and derivatives, ii, 475.
—— benzoyl-compounds of orthoparamidophenol, ii, 193.
Sturm. See Lill.
Stutzer, A., action of carbonic oxide on plants, i, 334.
—— the metamorphoses of the groups COOH, CH.OH.CH_2, and CH_2 in the living plant, i, 223.
Svedmark, E., microscopical examination of the uralite-porphyry of Vaksala, ii, 579.
v. Swiecicki, H., formation of pepsin by batrachians, i, 100.

T.

Tanisch, H., paratolylphenylacetic acid, ii, 618.
Tannereau, method of extracting and purifying sugar, ii, 241.
Tanret and Villiers, a saccharine matter obtained from the leaves of the walnut, ii, 304.
Tappeiner, H., oxidation of cholic acid with potassium bichromate and sulphuric acid, 213.
Taubert, A., reaction of acrolein hydrochloride, i, 295.
Teclu, N., action of PCl_5 on tungstic anhydride, ii, 709.
Terne, B., manufacture of glue, i, 122.
Terreil, A., metals accompanying iron, ii, 523.
—— oxidation of iron in a gas-furnace, ii, 709.
Teschemacher, E. F., determination of the amount of morphine in opium, ii, 231.
von Than, Karl, heat of combustion of the explosive mixture of oxygen and hydrogen in closed vessels, ii, 691.
Thenard, A., electro-metallurgy and electro-chemical actions, ii, 269.
Thoerner, W., apparatus for fractional distillation in a vacuum, i, 682.
—— new derivatives of paratolylphenyl ketone, i, 464.
Thomas, A., metabromobenzene-sulphonic acid, ii, 458.
Thomas, J. W., estimation of the gases dissolved in water, ii, 806.
—— on some points in gas-analysis, ii, 28.
—— gases enclosed in lignite coal and mineral resin from Bovey Heathfield, Devonshire, ii, 146.
Thoms, G., Baltic peat, ii, 798.

Thomsen, J., constitution of crystals of barium iodide, ii, 839.
—— on partial decomposition and the formation of ethers, ii, 725.
—— heat of formation of chloric acid, ii, 696.
—— heat of solution of chlorine-, bromine-, and iodine-compounds, ii, 693.
—— preparation of some platinum compounds, ii, 276.
—— a pretended relation between the mechanical equivalent of heat and molecular weights, ii, 164.
—— thermochemical researches, ii, 566, 574.
Thomson, W., action of different oils upon copper, i, 237.
Thorpe, T. E., on the theory of the Bunsen lamp, i, 627.
—— contributions to the history of the Old Sulphur Well, Harrogate, ii, 181.
—— phosphorus pentafluoride, i, 46.
Thresh, J. C., capsaicin, i, 720.
Thudichum, J. L., acetic acid, formic acid, &c., in urine, ii, 504.
Thudichum, J. L. W., thiocyanates in urine, ii, 505.
Thuerach, Hans, preparation of pure bismuth and of bismuth compounds, i, 283.
—— on substances which accompany molybdenum-glance, i, 285.
Thum, F. A., on Schaffner's method of estimating zinc, ii, 221.
van Tieghen, P., on the digestion of the perisperm (albumen), ii, 349.
Tiemann, F., constituents of creasote from beechwood tar, ii, 888.
Tiemann, F., and H. Herzfeld, the derivatives of paraoxybenzaldehyde, ii, 893.
—— —— synthesis of coumarin from salicylic aldehyde, i, 708.
Tiemann, F., and B. Mendelsohn, constitution of compounds of the coniferyl and vanillin series, i, 87.
—— —— isomerides of opianic, hemipinic, and quercimeric acids, ii, 487.
Tiemann, F., and Nagajosi Nagai, alpha-homovanillic acid and derivatives, ii, 339.
Tiemann. See also Reimer.
Tilden, W. A., oxidation-products of the aloïns, ii, 264.
—— some further experiments upon the aloïns, ii, 903.
Tilden, W. A., and W. A. Shenstone, on isomeric nitrosoterpenes, i, 554.
Timirazeff, C., decomposition of carbonic acid in the solar spectrum by the green parts of plants, ii, 635.
Tjaden, R. S., characters of the normal constituents of beer, as tested by the Stas-Otto and Dragendorff methods, ii, 809.
Toennies. See Baeyer.
Tollens, B., injurious character of many objects made of india-rubber, i, 240.
—— Lecture experiments. 1. Decomposition of glass by boiling water. 2. Demonstration of the presence of alcohol in beer or wine. 3. Ascent of water caused by spontaneous evaporation, i, 270.
—— specific rotatory power of cane-sugar, ii, 875.
—— specific rotatory power of glucose, i, 265.
Tollens. See also v. Grote.
Tollinger, thermal changes accompanying the solution of ammonium nitrate in water, i, 678.
Topf. See Liebermann.
Traube, Moritz, pure yeast, i, 107.
Trechmann, C. O., turnerite, ii, 117.
Trécul, A., change of colour in chlorophyll, ii, 629.
Trève and Durassier, action of acids on iron, i, 175.
Trojanowsky, P., contributions to the chemical knowledge of cacao, ii, 363.
Troost, L., new method of recognizing dissociated vapours, ii, 273.
—— on the vapour of chloral hydrate, ii, 829, 830.
Troost, L., and P. Hautefeuille, on the errors resulting from the application of the law of mixture of vapours in the determination of their density, i, 431.
—— —— the laws of compressibility and the coefficient of dilatation of certain vapours, i, 32.
—— —— the formation of compounds at a temperature considerably above that of their decomposition, ii, 273.
—— —— determination of vapour-densities, i, 33.
—— —— researches on the solution of gases in iron, steel, and manganese, i, 51.
Truelle, A., estimation of sugars and acid in 37 varieties of eating-apples and 6 varieties of cider-apples, ii, 514.
Tschaplowitz, F., water in seeds, ii, 797.
—— specific gravities of seeds, ii, 798.
Tschermak, G., on the formation of meteorites and on volcanic agency, i, 178.

Tuson, R. V., and E. Neison, volumetric estimation of mercury, ii, 679.
Typke, P. C. W., a new nickel mineral from New Caledonia, i, 285.

U.

Uelsmann, H., estimation of iron by stannous chloride, ii, 223.
—— solution of molybdenum in nitric acid, ii, 222.
Umlauf. See Schulze.
Unger, H., chemical examination of the "contact-zones" of the aluminous slate and granite block of Barr-Andlau, ii, 413.
Urbain, V., dissociation of sodium bicarbonate at 100°, i, 439.
Urich. See Schulze.
Ustimowitsch, C., alleged power of glycerin to replace sugar, i, 220.

V.

Vasseloff. See Popoff.
von den Velden, A., contributions to the knowledge of the three isomeric oxybenzoic acids, ii, 337.
Versmann, F., anthracene testing, i, 347.
Vibrans, O., the use of phosphoric acid in the manufacture of beet-sugar, i, 357.
Vidan, M., potassium cuprocyanide and potassium palladiocyanide, i, 456.
Viedt, E. W., logwood inks, i, 123.
Ville, the presence of tannin in gentian root, ii, 897.
Villiers, A., a new series of acid salts, ii, 428.
—— researches on melezitose, i, 451.
Villiers. See also Tanret.
Vincent, C., products obtained by calcining in close vessels the residues obtained in the fermentation of beet-root molasses, ii, 240.
—— products of the dry distillation of the "vinasse" from beet-root molasses, ii, 379.
—— reactions of an aqueous solution of trimethylaniline with metallic solutions, ii, 358.
Vitalis, D., detection of picric acid in beer, ii, 232.
Voelcker, A., agricultural analyses, ii, 637.
—— phosphatic guanos, i, 733.
Vogel, H. W., adulteration of wine, ii, 372.
—— detection of carbon monoxide, ii, 640.
—— a delicate spectroscopical reaction for alumina and magnesia, i, 742.
—— spectroscopical notices, ii, 269, 915.
—— spectroscopy of the colouring matter of blood, i, 331.
Vohl, H., carbonic acid springs of the Kyll-Thal in the Eifel (preliminary notice), i, 448.
—— detection of foreign mineral substances in flour, i, 753.
—— determination of impurities in river and well water, ii, 919.
Voit, C., separation of sal-ammoniac in urine, ii, 206.
Vortmann, G., on certain ammoniocobaltic compounds, ii, 845.

W.

Wachendorff, C., haloïd derivatives of the nitrotoluenes, i, 207.
Wachendorff, C., and Th. Zincke, styrolene alcohol and phenyl glycol, ii, 614.
Waine, G. W., composition of ferric phosphate, ii, 841.
Wald, Henrich, azo-compounds of diphenyl, ii, 341.
Waldbaner. See Hell.
Waldstein. See Liebermann.
Walitzky, W. E., cholesterin, i, 58.
Walkeim. See Henry.
Wallach, O., action of chloral and bromal on oxyacids, i, 59.
—— action of phosphorus pentabromide on amides, i, 68.
—— action of phosphorus pentachloride on acid amides, ii, 182.
—— action of phosphorus pentachloride on acetotoluidide, i, 91.
—— preparation of dichloracetic acid, i, 59.
Wallach, O., and P. Hunäus, chlorinated acrylic acid, ii, 591.
Wallach, O., and M. Hoffmann, action of PCl_5 on benzanilide, acetanilide, and acetethylamine, ii, 187.
Wanklyn, J. A., detection of alum in bread and flour, i, 231.
Warington, R., determination of nitric acid by indigo, i, 735.
Wasilewsky, S., chemico-legal determination of *Hyoscyamus niger*, *Datura Stramonium*, and *Atropa Belladonna*, ii, 934.

Weber, R., on sulphuric anhydride and a new sulphuric hydrate, ii, 164.
Websky, beryl from Eidsvold, Norway, ii, 174.
—— the isomorphism and chemical constitution of lievrite, humite, and chondrodite, ii, 117.
Weidel, H., cinchonine, ii, 343.
Weidel, H., and M. Gruber, action of bromine on triamidophenol in presence of water, ii, 778.
Weidel, A., and M. von Schmidt, modification of Sauer's method for estimating sulphur, ii, 798.
Weil, F., and F. Jean, note on a white lead coloured yellow by oil, ii, 948.
Weiske, H., composition of horn and of cray-fish shells, i, 728.
—— researches on the formation of hippuric acid in the organisms of herbivorous animals supplied with different kinds of fodder, i, 217.
Weith, W., carbotriphenyltriamine, ii, 448.
Weith. See also Merz.
Welde, Hermann, the sulphodicarbonic acids, ii, 314.
Wenghöffer, L., action of sulphuryl chloride and ethylsulphuric chloride on aniline, ii, 447.
Werner, H., action of various bodies on nitroethane, i, 297.
Weselsky, P., glycyrrhetin, i, 96.
Weselsky, P., and J. Schuler, preparation of hydroquinone, i, 78.
Wiesner, influence of light and of radiant heat on the transpiration of plants, ii, 349.
Widmann, O., on the chlorine derivatives of naphthalene, ii, 899.
Widmann. See also Atterberg.
Widnmann, E., nitrobenzoic acids, ii, 783.
Wigner, G. W., determination of the specific gravities of fats at high temperatures, ii, 108.
—— volumetric determination of carbonic acid, ii, 218.
Wigner, G. W., and R. H. Harland, white lead, ii, 948.
Will. See Winter.
Willgerodt, action of α-dinitrochlorobenzene on acetamide, i, 473.
—— action of α-dinitrochlorobenzene on amido-compounds, i, 90.
—— action of α-dinitrochlorobenzene on carbamide, i, 473.
Williams, C. Greville, analysis of emeralds and beryls, ii, 574.
Williams, W. Carleton, derivatives of di-isobutyl, i, 541.
Wilson, P. B., silica in grasses, i, 336.
Winkelmann, A., the specific heat of mercury, i, 678.
—— on the vapour-tension of homologous series, and on Kopp's law of constant differences of boiling point, ii, 822.
Winkler, C., process for rendering the arsenical residues of the manufacture of aniline innocuous, ii, 377.
—— resistance of aluminium to atmospheric and other actions, ii, 945.
Winter, A., and W. Will, the basalt of the Schiffenberg, near Giessen, ii, 579.
Wischnegradsky, A., amylene, ii, 286.
Wischnegradsky, A., and F. Flawitsky, structure of the isomeric amylenes, ii, 420.
Wiskemann, Max, spectroscopic estimation of the amount of hæmoglobin in human blood, ii, 808.
Wislicenus, J., syntheses by means of acetoacetic ether, ii, 432.
Witt, O. N., action of amides on amidoazo-compounds, ii, 453.
—— chrysoïdin, ii, 243, 457.
Witting, F., and J. Post, preparation of isomeric xylenesulphonic acids, ii, 611.
Wittstein, G. C., ash of *Euphorbia amygdaloïdes* and of *Hermiaria glabra*, i, 487.
—— examination of the sun-flower, i, 487.
—— direct determination of soda in potashes, ii, 510.
—— magnesium, &c., in zinc, ii, 707.
Witz, G., vanadium-aniline black, ii, 950.
Wöhler, F., behaviour of palladium in an alcohol-flame, i, 437.
—— separation of arsenic from nickel and cobalt, ii, 573.
Wolff, R., decomposition of cantharidin in cantharides, i, 722.
Wolff, Funke, and Dittmann, assimilation of different sorts and mixtures of foods by pigs, i, 98.
Wolffberg, S., origin and accumulation of glycogen in the animal organism, i, 484.
Wolffhügel, effect of sewers, &c., on the purity of the soil, i, 240.
Wreden, F., hydrogenation of benzene and its homologues, ii, 445.
—— tetrahydroisoxylene and the constitution of camphoric acid, ii, 446.
Wreden, F., and B. Znatowicz, preparation of isobutylbenzene, ii, 885.

Wreden, F., and B. Znatowicz, action of hydriodic acid on naphthalene, i, 466.
—— hex- and octo-hydronaphthalene, ii, 809.
Wright, A. W., the gases contained in meteorites, i, 289, 702.
Wright, C. R. A., the alkaloïds of the aconites. Part I. On the crystallisable alkaloïds contained in *Aconitum Napellus*, i, 143.
—— on narcotine, cotarnine, and hydrocotarnine. Part V. On new cotarnine derivatives, and on noropianic acid, ii, 525.
Wright, C. R. A., and C. H. Piesse, note on otto of limes, ii, 548.
Wrightson, F., quantitative estimation of metals by electrolysis, i, 340.
Wurtz, A., on the law of Avogadro and Ampère, ii, 404, 569.
—— some derivatives of dialdol, i, 588.
—— ethylate of chloral, ii, 878.
—— a polymeride of ethylene oxide, i, 291.
—— composition of certain phosphites, i, 440.
—— rosaniline and fuchsine, i, 322.
Wurtz, F. See Lefort.
Wyndham, T. H. G., obituary notice of, i, 510.
Wyrouboff, G., on two new ferricyanides and a thiocyanoplatinate of potassium, ii, 869.
—— researches on the ferrocyanides, i, 190.
Wyss, G., glyoxaline, i, 299.

Y.

Young, W. C., estimation of alum in bread, ii, 510.
—— estimation of free sulphuric acid in vinegar, &c., ii, 917.
—— production of sulphuric acid by combustion of coal-gas, ii, 110.
Yvon, action of sodic and calcic hypochlorites on urea, ii, 226.
—— comparative chemical examination of *Thapsia garganica* and *Thapsia silphium*, ii, 914.
—— the nitrates of bismuth, ii, 572.

Z.

Zagoumenny, A., some derivatives of deoxybenzoïn, ii, 194.
—— diphenylcarbinol and some of its derivatives, i, 459.
Zanni. See Lossen.
Zeidler, F., allylacetic ether and its derivatives, ii, 437.
—— behaviour of various amylenes to oxidising agents, ii, 421.
Zenoni. See Brugnatelli.
v. Zepharovich, V., bournonite from Waldenstein, Carinthia, and from Pribram, i, 583.
—— crystallo-optical investigation of certain camphor derivatives, i, 594.
—— sulphur from Cianciana and Lercara, in Sicily, i, 583.
—— red vanadinite from the lead-works on the Ober, near Kappel, i, 583.
Zincke, Th., action of dilute sulphuric acid on hydrobenzoïn and isohydrobenzoïn, i, 460.
—— compounds of the hydrobenzoïn group, ii, 622.
Zingler, improvements in the manufacture of varnish, ii, 244.
—— see also Kingzett.
Zinin, N., isolepidene, ii, 787.
Znatowicz. See Wreden.
Zoller, B., potassium xanthate as an antiseptic, ii, 954.
Zulkowski, K., constitution of corallin, ii, 480.
—— formation of rosolic acid from cresol and phenol, ii, 888.
Zulzer, relation of phosphoric acid to nitrogen in urine, ii, 205.
Zuntz, N., respiration of the mammalian fœtus, ii, 502.

INDEX OF SUBJECTS.

1877. Vols. I and II.

A.

Absorption, selective, i, 571.

Achillea Ageratum (Linn.), essence of, i, 326.

Acetals, chlorinated, and some of their derivatives, i, 295.

Acetamide, action of α-dinitrochlorobenzene on, i, 473.

Acetamines, oxidation of aromatic, by potassium permanganate, i, 90.

Acetanilide, i, 619.

—— action of phosphorus pentachloride on, ii, 187.

Acetate of magnesium, crystalline, preparation and fermentation of, ii, 588.

Acetate of silver, dibromo-, decomposition of, when heated with alcohol, ii, 93.

—— —— decomposition of, when heated with dry ether, ii, 93.

—— —— decomposition of, when heated with water, ii, 91.

Acetates, acid, ii, 428.

Acetethylamine, action of phosphorus pentachloride on, ii, 187.

Aceteugenol, ii, 339.

Acetic acid, action of monochloro-, on the thiocyanates of the aromatic monamines, ii, 873.

—— —— action of monochloro-, on thiocyanic acid and its salts, ii, 872.

—— —— conversion of α-dichloropropionic acid into, ii, 181.

—— —— determination of, ii, 641.

—— —— solution of sulphur in, ii, 276.

—— —— allyl-, synthesis of, ii, 593.

—— —— diallyl-, researches on the synthesis of, ii, 593.

—— —— dibromo-, and glyoxylic acids, ii, 90.

—— —— dichlor-, ii, 179.

—— —— dichlor-, preparation of, i, 59.

—— —— trichlor-, action of sodium ethylate on, i, 291.

—— —— trichlor, carbon chlorobromide from, ii, 422.

—— —— formic acid, &c., in urine, ii, 504.

Acetic anhydride, action of, on chloral ammonia, ii, 308.

—— —— preparation of, ii, 730.

—— —— and allyl iodide, preparation of, ii, 874.

Acetic ether, acetyl-, some derivatives, ii, 594.

Acetic and butyric ethers of quercite, ii, 877.

Acetoacetate of amyl, action of chlorine on, ii, 436.

Acetoacetate of ethyl, halogen derivatives of, ii, 435.

Acetoacetate isopentylic or amylic, ii, 435.

Acetoacetic ether, synthesis by means of, ii, 432.

Acetoacetic ether, benzoyl-, ii, 437.

Acetoacetic ether, benzyl-, ii, 438.

Acetoethylacetate of amyl, action of chlorine on, ii, 436.

Acetonamine, alcohol-bases formed by the hydrogenisation of di- and tri-, i, 592.

Acetonamine chloride, di-, action of hydrocyanic acid on, ii, 878.

Acetonamine, nitrosotri-, ii, 428.

—— —— decomposition of, by acids, ii, 583.

—— —— production of phorone from, ii, 583.

Acetone, action of bromine on, i, 463.

—— ammonia-derivatives of, ii, 614.

—— in urine, i, 101.

Acetone-base, a sixth, i, 592.

Acetones, monochloro-, ii, 427.

Acetonic acid, action of, on urea, ii, 741.

Acetonitril, action of chlorine on, i, 297.

Acetonitrils, chlorinated, action of alkalis on, i, 297.

Acetophenone, chlorinated, ii, 327, 481.

Acetopolyporic acid, ii, 621.

Acetotoluidide, action of PCl_5 on, i, 91.

Acetyl chloride, action of, on some amides, i, 614.

—— —— action of, on chloral-ammonia, ii, 308.

—— —— action of, on monacetylchloral-ammonia, ii, 308.

Acetyl chloride and chloral, combination of, i, 188.
Acetylacetic ether, derivatives of, ii, 594.
Acetyl-amidophenol, i, 303.
Acetyl-chrysazin, i, 612.
Acetyl-emodin, i, 610.
Acetylene, action of sulphuric acid on, ii, 583.
—— preparation of, ii, 868.
Acetylene-dicarbonic acid, ii, 592.
Acetylene-urea, ii, 885.
Acetyl-paracoumaric acid, ii, 893.
Acetylphenylnitrosamine, preparation and new reactions of, ii, 885.
Acetylphenyloxamate, ethylic, i, 711.
Acetyl-phenyl-thiocarbamide, i, 313.
Acetyl-purpurin, tri-, ii, 625.
Acid chlorides, conversion of, into alcohols, i, 58.
Acid contained in crude petroleum, oxidation of, ii, 432.
Acid radicles, thiocyanates of the, ii, 869.
Acid and sugars, estimation of, in 37 varieties of eating apples and six varieties of cider apples, ii, 514.
Acidimetry, ii, 916.
Acids, action of, on iron, i, 175.
—— electric conductivity of, in aqueous solution, ii, 104.
Acids of the acrylic series, monochlorinated, ii, 590.
Acids, anhydrous, heat disengaged by the union of, with water in the gaseous state, ii, 835.
Acids, chlorinated, simple method of preparing, ii, 590.
Acids, $C_5H_6O_4$, i, 590.
Acids, complex inorganic, ii, 847.
Acids of the gastric juice, free, ii, 910.
Acids, halogen, action of, on selenious anhydride, i, 45.
— — —— action of, on tellurous oxide, i, 45.
Acids, ketonic, researches on, ii, 439.
Acids, mineral, detection of, in vinegar, i, 752.
Acids, non-saturated, ii, 735.
Acids, non-saturated bibasic, constitution of, ii, 738.
Acids, organic, action of, on minerals, ii, 358.
Acids, organic, and ketones, synthesis of, by means of chlorocarbonic acid, ii, 334.
Acids, oxy-, action of chloral and bromal on, i, 59.
Acids, oxy-, oxidation of, ii, 309.
Acids, polybasic, derived from phenol and carbon dioxide, ii, 485.
Acids in Roman chamomile oil, i, 97; ii, 429.
Acids of wine, vegetable, ii, 883.
Acids and alkalis, a new indicator for titrating, ii, 640.
—— —— new test for, i, 344.
Acids and salts, inversion of sugar by, i, 451.
Aconites, alkaloïds of the, Part I, i, 143.
Aconitic acid in the juice of the sugar-cane, ii, 182.
Aconitic and citric acids, i, 456.
Aconitine, i, 148.
Aconitum Napellus, crystallisable alkaloïds contained in, i, 143.
Acrolein hydrochloride, reactions of, i, 295.
Acrylate of sodium, behaviour of, with fused potash, ii, 735.
Acrylic acid, dichlor-, ii, 591.
Acrylic acid, hydrobromocumenyl, ii, 661.
Acrylic acid, monochlor-, ii, 592.
—— —— —— conversion of *a*-dichloropropionic acid into, ii, 181.
Acrylic acid series, monochlorinated acids of the, ii, 590.
Acrylic acids, chlorinated, ii, 591.
—— —— monochlorinated, ii, 590.
—— —— —— conversion of *a*-dichloropropionic acids into, ii, 181.
Acrylic series, new acid (tetracrylic) belonging to the, ii, 432.
Adonis vernalis, some constituents of, i, 96.
Adular, etched figures on, ii, 116.
Aërinite, a new mineral, i, 53.
Aërinite and ginilsite, ii, 412.
Affinity, capillary, i, 166.
Affinity, chemical, i, 165; ii, 403.
Agave, influence of the leaves and flowering branches on the nature and quantity of the sugar contained in the flower-stem of the, ii, 506.
Aggregation, soft and semi-fluid states of, i, 433.
Agricultural analyses, ii, 637.
Air, contamination of, arising from artificial illumination, and on the distribution of carbonic anhydride in close rooms, ii, 810.
—— decomposition of potassium cyanide, zinc cyanide, and potassium formate in, i, 66.
—— employment of compressed, in filtering solutions, i, 270.
—— polarisation of electrodes in water free from, i, 266.
Air and rain-water of Montsouris, estimation of ammonia in, ii, 509.
Air-pump, simple exhausting and compressing, i, 682.
Alabaster-glass, manufacture of, ii, 946.

Albite, etched figures on, ii, 116.
—— reproduction of, ii, 574.
Albumin, action of cyanogen on, ii, 907.
Albumin of commerce, ii, 952.
Albumin, estimation of, in urine, ii, 368.
Albumin containing very small quantities of salts, properties of, ii, 345.
Albumin and gelatin, decomposition of, by pancreas ferments in absence of air, ii, 630.
Albuminoïd substances, new derivative of, i, 725.
Albuminoïds, fat-forming equivalent of, ii, 347.
Albuminous bodies, digestion of, by pepsin and hydrochloric acid, i, 101.
Albuminous ferment of the pancreas, i, 103.
Albumins, action of arsenic on the chemical change (metabolism) of, ii, 912.
Alcohol, action of nascent thiocyanic acid on, ii, 423.
—- from Barbary figs, experiments on, i, 355.
—— new chemical test for, i, 109.
—— decomposition of silver dibromacetate when heated with, ii, 93.
—— demonstration of the presence of, in beer and wine, i, 270.
—— estimation of, by the boiling point, i, 346.
—— occurrence of grape-sugar in, i, 705.
Alcohol and hydrogen dioxide, i, 24.
Alcohol and iodine, action of, on the platinonitrates, ii, 710.
Alcohol-bases formed by the hydrogenisation of di- and tri-acetonamine, i, 592.
Alcohol-flame, behaviour of palladium to, i, 437.
Alcohol-radicles, action of water on the haloïd compounds of the, ii, 422.
Alcohols, action of sulphuryl chloride on, i, 182; ii, 387.
Alcohols, conversion of acid chlorides into, i, 58.
Alcohols of the fatty series, action of, on benzoylsulphocarbimide, i, 709.
Alcohols, monatomic, and oxalic acid, reciprocal action of, i, 183.
Alcohols, tertiary, formation of, i, 57.
—— —— containing three different radicles, synthesis of, ii, 732.
Alcohols and phenols, action of, on thiocarbimides, ii, 871.
Aldehyde-ammonia and chloral-ammonia, constitution of, ii, 308.
Aldehyde-ammonia, a series of compounds derived from, i, 313.
Aldehyde-compounds, i, 314.
Aldehyde, terephthalic, i, 206.
Aldehydes, synthesis of the, ii, 304.
Aldehydes, aromatic, formation of coumarin and of cinnamic and other analogous acids from the, i, 388.
Aldehydes, thio-, ii, 305.
Aldehydic acid, action of, on urea, ii, 741.
Aldehydo-salicylic acids, ortho-, and para-, i, 83.
Aldehydovanillic acid, i, 87.
Aldol, di-, some derivatives of, i, 588.
Alimentary substances, presence of metallic compounds in, ii, 912.
Alizarimide, i, 613.
Alizarin, action of ammonia on, ii, 342.
—— detection of small quantities of, in mixtures of alizarin and purpurin, i, 665.
Alizarin, nitro-, application of, to steam dyeing, ii, 950.
Alkali from sea-weed, i, 237.
Alkali-metals, action of, on ethyl succinate, ii, 319.
—— behaviour of the sulphides of, to water, ii, 111.
Alkaline earths, determination of potassium as platinochloride in presence of the chlorides of the metals of the, ii, 220.
Alkaline haloïds, action of, upon ultramarine, ii, 707.
Alkaline sulphates, determination of, i, 738.
Alkalis, action of calcium sulphate on the sulphates of, i, 440.
—— action of, on the chlorinated acetonitrils, i, 297.
—— does ozone combine with free nitrogen in presence of, to form nitrites and nitrates? i, 438.
—— separation of vanadic acid from, ii, 922.
—— solubility of, in ether, ii, 706.
Alkalis, caustic, copper salts, and carbon sulphide, determination of, by potassium xanthate, ii, 929.
Alkalis and acids, a new indicator for titrating, ii, 640.
—— —— new test for, i, 344.
Alkalis and alkaline earths, volumetric analysis of a mixture of the sulphates of, ii, 353.
Alkaloïd found in damaged Turkey corn and in mildewed maize bread, i, 323.
Alkaloïd separations, reagents for, i, 348.

Alkaloïds, ammonium sulphomolybdate as a test for, ii, 230.
Alkaloïds, distribution of the, in cinchona trees, ii, 636.
—— influence of nitrogenous manures on the yield of, in certain plants, ii, 213.
—— modification of the process for extracting the poisonous, from the viscera, i, 110.
—— some new reactions for, ii, 365.
—— separation of the, ii, 230.
Alkaloïds of the aconites, i, 143.
Alkaloïds of celandine (*Chelidonium majus*), i, 477.
Alkaloïds, crystallisable, contained in *Aconitum Napellus*, i, 143.
Alkaloïds of the fatty series, action of alkaline thiocyanates upon the hydrochlorides of the, ii, 309.
Alkaloïds of the fly agaric, investigations on the, ii, 197.
Alkaloïds, poisonous, simplified method of extracting, i, 93.
Allantoïn, identity of, with glyoxylic diureide, ii, 741.
Allophanic ether, benzoyl-, i, 615.
Alloxanates, conversion of malic ureides into, ii, 741.
Alloys, action of, on nitric acid, ii, 86.
—— comportment of certain, under the action of the blowpipe, ii, 216.
—— estimation of antimony in, ii, 222.
—— —— preparation of, ii, 730, 874.
Allyl iodide and zinc, action of, on ethyl oxalate, i, 60, 455.
Allyl and ethyl iodides, action of a mixture of, on ethyl formate in presence of zinc, ii, 298.
Allyl thiocyanate, reaction of, with aldehyde-ammonia, i, 313.
Allylacetic acid, synthesis of, ii, 593.
Allylacetic acid, di-, synthesis of, ii, 593.
Allylacetic ether and its derivatives, ii, 437.
Allylanisoïl, para-, or anethol, ii, 669.
Allylbenzene, ii, 666.
Allylbenzene, isopropyl-, ii, 664.
Ally carbinol, di-, synthesis of, ii, 297.
Allyldimethyl carbinol, synthesis of, ii, 298.
Allylmethyl carbinol, di-, synthesis of, ii, 299.
Allyloxalic acid, di-, ii, 738.
Allyloxalic acid, synthesis of di-, ii, 882.
Allyloxalic acid, tetrabromodi-, ii, 883.
Allylsulphocarbimide, formation of, ii, 309.
Allylthiosinamine, i, 314.
Almonds, microzymes of sweet, as producers of diastase and synaptase, i, 106.
Aloes, dyeing with, ii, 378.
Aloïns, some further experiments on the, ii, 903.
—— oxidation products of the, ii, 264.
Althæa nigra, detection of, in wine, ii, 936.
Alum in bread, estimation of, ii, 510.
Alum, detection of, in bread and flour, i, 231.
Alum in flour, detection of, ii, 510.
Alum-meal, i, 353.
Alumina, industrial preparation of pure salts of, ii, 521.
—— precipitation of phosphoric acid by ammonia in presence of, i, 578.
Alumina and ferric oxide, separation of vanadic acid from, ii, 175.
Alumina and iron oxide, precipitation of, by sodium acetate, i, 344.
—— —— determination of, in presence of phosphoric acid, ii, 223.
Alumina and magnesia, delicate spectroscopical reaction for, i, 742.
Aluminic iodide, action of, on glycerin, ii, 300.
Aluminium, action of, on nitric acid, ii, 84.
—— electro-chemical deposition of, i, 161.
—— resistance of, to atmospheric and other action, ii, 945.
Aluminium in zinc, ii, 707.
Aluminium bromide, new method of brominating aromatic hydrocarbons in presence of, ii, 599.
Aluminium and chromium, estimation of, in steel and iron, ii, 802.
Aluminium and iron hydrates, dehydration of, by the time method, ii, 395.
Aluminium and iron oxides, separation of vanadic acid from, ii, 922.
Aluminium sulphate, effect of, on sewage, i, 355.
—— —— manufacture of, from blast-furnace slags, ii, 239.
Aluminium sulphate and alums, volumetric estimation of, ii, 355.
Aluminous chrysocolla from Utah, ii, 854.
Alums, volumetric estimation of, ii, 355.
Amarine, lophine, and hydrobenzamide, ii, 887.
Amazon-stone from Pike's Peak, Colorado, colouring matter of, ii, 720.
Amazon-stone of Pike's Peak, Colorado, zircon in the, ii, 720.
Amber, yellow, ii, 903.

Amidacetonaphthalide, i, 601.
Amid-azo-compounds, action of amides on, ii, 453.
Amid-azo-compounds of the tolyl series, ii, 433, 767.
Amide of glutamic acid, occurrence of, in the young plants of the pumpkin, ii, 324.
Amides, action of acetyl chloride and of benzoyl chloride on some, i, 614.
—— action of, on amid-azo-compounds, ii, 453.
—— action of nitrous acid on substituted, ii, 607.
—— action of phosphorus pentabromide on, i, 68.
—— action of phosphorus pentachloride on acid, ii, 182.
—— Sachsse and Kormann's method for the determination of nitrogen when existing in the form of, ii, 917.
Amides of the naphthalene-sulphonic acids, ii, 490.
Amidochrysophanic acid, i, 614.
Amido-compounds, action of α-dinitrochlorobenzene on, i, 90.
Amido-compounds of the oxyanthraquinones, i, 612.
Amido-derivatives and ammonia, action of, on pyroracemic acid, ii, 320.
Amidodimethylaniline, ii, 603.
Amidonaphthols, i, 603.
Amidonaphthylsulphonic acid and its derivatives, i, 208.
α-Amidonitrophenol, ii, 474.
Amidophenol, action of chlorocarbonic ether on, i, 472.
—— reaction of, with benzoic acid, i, 303.
Amidophenol, β-di, and derivatives, ii, 475.
Amidophenol, diacetyl-, i, 305.
Amidophenol, dibenzoyl-, i, 305.
Amidophenol-ortho-, reaction of, with acetic acid, i, 302.
—— —— reaction of, with oxalic acid, ii, 753.
Amidophenyl, ortho-, reaction of, with formic acid, ii, 752.
Amidophthalic acid, ii, 336.
β-Amidopropionic acid, ii, 311.
Amido-sulphonic acid, ii, 111.
Amine-bases, preparation and estimation of the, by the formation of their alums, i, 620.
Amines, action of diazo-compounds on tertiary, ii, 454.
—— researches on the aromatic, ii, 885.
Amines, di-, action of phthalic anhydride on aromatic, ii, 783.
Ammonia, action of carbon oxysulphide on aqueous, ii, 307.
Ammnoia, action of, on chloracetyl-benzene, i, 459.
—— action of, on oxybromides and on oxide of bismuth, i, 27.
—— action of, on sodium phosphate, ii, 703.
—— estimation of, in the air and rain-water of Montsouris, ii, 509.
—— estimation of, for meteorological purposes, ii, 510.
—— estimation of, in salts of ammonium, i, 227.
—— precipitation of phosphoric acid by, in presence of lime, baryta, magnesia, alumina, and ferric oxide, i, 578.
—— presence of free, in cast steel, ii, 169.
Ammonia and amido-derivatives, action of, on pyroracemic acid, ii, 320.
Ammonia and glyoxylic acid, ii, 99.
Ammonia, oxy-, thermic formation of, i, 46.
Ammonia-soda process, use of, in working up gas-liquor, ii, 236.
Ammoniacal distillation-products, decomposition of, by rock-salt, sea-salt, Glauber's salt, and Chili saltpetre, ii, 237.
Ammonio-cobaltic compounds, ii, 845.
Ammonio-tetrahydric sulphate, bi-, ii, 703.
Ammonium bases, new platinum salt containing two, i, 592.
Ammonium bisulphate, ii, 703.
Ammonium butyrate, solubility of lead carbonate in, i, 283.
Ammonium chloride, combinations of, with the chlorides of potassium and sodium, ii, 839.
Ammonium chloroplatinite, ii, 276.
Ammonium compounds, ii, 190, 570, 754.
Ammonium molybdate, effect of silicic acid upon the estimation of phosphoric acid by, i, 344.
Ammonium nitrate, action of manganese dioxide on, ii, 112.
—— —— decomposition of, by heat, ii, 840.
Ammonium nitrate in water, thermal changes accompanying the solution of, i, 678.
Ammonium peruranate, i, 134.
Ammonium salts, decomposition of some, by potassium and sodium salts, i, 490.
Ammonium salts, dissociation of, in presence of metallic sulphides, ii, 829.
Ammonium sulphate, ii, 703.
Ammonium sulphate and sodium sulphate, separation of, ii, 238.
Ammonium sulphates, some new acid, ii, 703.
Ammonium sulphide, influence exerted

by, in preventing the action of various solutions on copper, i, 642.
Ammonium sulphides, vapour-density of, ii, 840.
Amorphous bodies, application of the principle of dissimilar molecules to the gradual crystallisation of, i, 435.
Ampère and Avogadro, law of, ii, 404.
Amphibia, relation between tissue-metamorphosis and body-temperature in, i, 327.
Amyl acetoacetate, ii, 435.
Amyl acetoacetate and acetoethylacetate, action of chlorine on, ii, 436.
Amyl, di-, ii, 260.
—— —— formation of the acetates of, ii, 262.
—— —— formation of the alcohols of, ii, 262.
—— —— note on the discovery of, ii, 679.
—— —— chlorination of, ii, 261.
—— —— oxidation of the alcohols of, ii, 263.
Amylene, ii, 286.
—— constitution of, ii, 286.
Amylenes, behaviour of various, to oxidising agents, ii, 421.
—— structure of the isomeric, ii, 420.
Amylic alcohol, action of sodium hydrate on inactive fermentation, i, 449.
Amylic alcohol, inactive fermentation, i, 292.
Amytrimethylammonium chloirde, ii, 199.
Anæsthetic, use of carbon tetrachloride as an, ii, 912.
Analcime from Puy-de-Dome, ii, 283.
Analyses, agricultural, ii, 637.
Analysis, chemical, several methods of, i, 226.
Analysis, gas apparatus for quantitative blowpipe, ii, 215.
Analysis, volumetric, portable apparatus for, ii, 798.
Analytical processes for meteorological purposes, ii, 510.
Analytical and synthetical operations, a new apparatus for heating substances in sealed tubes under high pressure, suitable for, ii, 639.
Andesite from Gerecses, tridymite-bearing, ii, 280.
Anethol or parallylanisoïl, ii, 669.
Anethol camphor, met-, ii, 480.
Anethol and eugenol, constitution of the radicle C_3H_5 in, ii, 479.
Anethol and its homologues, ii, 660.
Angelic acid, furfur-, ii, 746.
—— —— phenyl-, i, 393.
Angustura bark, essential oil of true, ii, 932.
Anhydrides, action of dehydrating agents on, ii, 486.
Aniline, action of, on pyruvic acid, ii, 596.
—— action of methyl chloride, bromide, and iodide on, ii, 604.
—— action of sulphuryl chloride and ethylsulphuric chloride on, ii, 447.
—— rhodeine a test for, i, 109.
—— transformation of chinoline into, ii, 499.
Aniline and other bodies of the same group, thermo-chemistry of, ii, 568.
Aniline, amidodimethyl, ii, 608.
Aniline, benzoyldimethyl, ii, 606.
Aniline-black, i, 91.
—— —— conversion of the base of, into a pink fluorescent colouring matter, ii, 766.
—— —— dye-bath for, ii, 606.
—— —— metamorphoses of, ii, 763.
—— —— method of preventing, from turning green, ii, 950.
—— —— transformation of, into a fluorescent rose-coloured substance, ii, 606.
Aniline-black, vanadium, ii, 950.
Aniline-black vat, ii, 763.
Aniline colours, process for rendering innocuous the arsenical residues of the manufacture of, ii, 377.
Aniline derivatives, behaviour of, when passed through red-hot tubes, ii, 447.
Aniline manufacture, base derived from a waste-product in the, ii, 762.
Aniline, sulphatoperiodide of, i, 715.
Aniline, diethyl-, action of, on the chloride of diethylamidobenzoic acid, ii, 335.
Aniline, dimethyl-, derivatives of, ii, 603.
Aniline, monobromodimethyl-, ii, 603.
Aniline, monomethyl-, ii, 325, 604, 755, 885.
Aniline, mononitrodimethyl-, ii, 603.
Anilines, chlorinated, i, 473.
Anilines, substituted, thermo-chemistry of, ii, 696.
Aniline-tailings, base $C_{13}H_{13}N$, ii, 606.
Animal, researches on the bones of a carnivorous, i, 328.
Animal body, behaviour of phenols to, i, 486.
—— —— formation of phenol in, ii, 504.
Animal organism, dissemination of glycogen in the, ii, 204.
—— —— double decomposition of potassium bromide and sodium chloride in the, i, 731.
—— —— origin and accumulation of glycogen in the, i, 484.
Animal and vegetable substances, new

method for the gravimetric or volumetric determination of phosphorus, arsenic, sulphur, chlorine, bromine, and iodine in, i, 739.
Animals, differences of chemical structure and of digestion amongst, ii, 202.
—— on different diets, situation of the deposit of fat in, ii, 791.
—— formation of glycogen in the bodies of, ii, 204.
—— influence of the surrounding temperature on the tissue-metamorphosis of warm-blooded, i, 327.
—— influence of temperature on the respiration of cold-blooded, i, 327.
—— researches on the formation of hippuric acid in the organisms of herbivorous, supplied with different kinds of fodder, i, 217.
Animals and plants, equivalent substitution of mineral substances in, i, 98.
—— —— presence of zinc in the bodies of, ii, 504.
Anisic aldehyde, acids from, i, 408.
Anisoïl, parabutenyl-, ii, 670.
Anisoïl, parallyl-, or anethol, ii, 669.
Anisoïl, paravinyl, ii, 668.
Ankerite, some minerals from the Silurian iron-stone deposits and the coal-formation of Bohemia resembling; and on the chemical constitution of the minerals classed with, i, 581.
Anniversary meeting of the Chemical Society (March 29, 1877), i, 493.
Anthophyllite from Bamle, in Norway, ii, 850.
Anthracene, method of estimating pure, in crude, ii, 228.
—— action of chromyl dichloride on, ii, 494.
—— preparation of anthraquinone by the action of chloride of lime solution and a metallic salt on, i, 360.
—— production of, i, 239.
—— halogen-derivatives of, ii, 493.
—— some new derivatives of i, 209.
—— testing of, i, 232, 347, 748.
Anthracene, dibrom-, an isomeride of, i, 86.
Anthracene, dichloro-, dichloride of, ii, 493.
—— —— tetrabromide of, ii, 493.
Anthracene, methyl-, occurrence of, in coal-tar, ii, 624.
Anthranilic acid, action of, on pyroracemic acid, ii, 322.
Anthranol, i, 86.
Anthraquinone, ii, 787.
—— preparation of, by the action of chloride of lime solution and a metallic salt on anthracene, i, 360.
Anthraquinone-group, studies in the, i, 609.
Anthraquinone, dibromoxy-, formation of, from tetrabromophthalein, i, 308.
Anthraquinone-carbonic acid, i, 610.
Anthraquinones, trioxy-, simultaneous formation of two, i, 209.
Antimonic acid, pyro-, trihydroxyl-antimonic acid, and oxychloride of antimony, ii, 406.
Antimonic acid, trihydroxyl-, pyroantimonic acid, and oxychloride of antimony, ii, 406.
Antimonious chloride, action of, on azobenzene, ii, 325.
Antimonious chloride and mercaptan, ii, 296.
Antimonite of lead from Arnsberg, Westphalia, ii, 855.
Antimony, electro-chemical deposition of, i, 161.
—— estimation of, in alloys, ii, 222.
—— evolution of, from stibnite by nascent hydrogen, i, 174.
Antimony ochre, native, from Arkansas, ii, 853.
Antimony oxychloride, trihydroxyl-antimonic acid, and pyroantimonic acid, ii, 406.
Antimony trichloride, action of, on benzene, toluene, and naphthalene, ii, 551.
Antimony and arsenic, separation of, by Bunsen's method, ii, 922.
Antiseptic, potassium xanthate as an, ii, 954.
Antiseptic powers of oxidised oil of turpentine, i, 184.
Antiseptic and toxic vapours, action of, on the fermentation of fruits, ii, 507–8.
Apatite and nephelin, microscopic discrimination of, ii, 411.
Apiol, i, 326.
Apples, estimation of sugars and acid in 37 varieties of eating, and six varieties of cider apples, ii, 514.
Arable land, phosphoric acid in, ii, 913.
Arachis hypogæa, analysis of the ash of, i, 225.
Archibiosis, ii, 632.
Ardennite, i, 54.
—— separation of vanadic acid from alumina and ferric oxide in, ii, 173.
Argentothioglycollic acid, ii, 596.
Aromatic aldehydes, formation of coumarin and of cinnamic and other analogous acids from the, i, 388.
Aromatic amines, research on the, ii, 885.
Aromatic arsenic compounds, i, 311; ii, 452.

Aromatic bases, phthaleïns of the tertiary, ii, 465, 607.
Aromatic bodies, action of, on excess of iodine chloride, i, 706.
—— —— results of the exhaustive action of bromine on, i, 300.
—— —— results of exhaustive chlorination of, i, 299.
Aromatic diamines, action of phthalic anhydride on, ii, 783.
Aromatic disulphides, reactions of, i, 463.
Aromatic hydrazine compounds, ii, 887.
Aromatic monamines, action of monochloracetic acid on the thiocyanates of the, ii, 873.
Arragonite, pseudomorph of, after gypsum, i, 698.
Arsenates of copper and zinc, crystallised, i, 690.
Arsenic, action of, on the chemical change (metabolism) of albumins, ii, 912.
Arsenic, estimation of, as magnesium pyroarsenate, ii, 222.
—— separation of, from nickel and cobalt, ii, 573.
—— in tapers, ii, 922.
—— volumetric estimation of, i, 739.
Arsenic and antimony, separation of, by Bunsen's method, ii, 922.
Arsenic and chromium, a compound of, i, 283.
Arsenic and phosphorus, estimation of, by ammonium molybdate, i, 738.
Arsenic, sulphur, phosphorus, chlorine, bromine, and iodine, new method for the gravimetric or volumetric determination of, in organic substances, and in vegetable and animal compounds, i, 739.
Arsenic acid, alkalimetric estimation of, ii, 355.
—— —— volumetric estimation of, by uranium solution, i, 741.
Arsenic anhydride, phenyl-, ii, 453.
Arsenic compounds, aromatic, i, 311; ii, 452.
Arsenic mercaptides, ii, 295.
Arsenical residues of the manufacture of aniline colours, process for rendering innocuous, ii, 377.
Arseniochlorides, phenylic, i, 311.
Arsenio-tungstates, ii, 848.
Arsenious and sulphurous acids, oxidation of, ii, 841.
Arsenphenyl dibromide, ii, 452.
Arsenphenyl oxide, ii, 452.
Arsenphenyl oxychloride, ii, 452.
Arsenphenyl tetrachloride, ii, 452.
Arsine, diethylphenyl-, ii, 452.
Arsinic acids, mono- and diphenyl-, i, 311.
Ashes, detection of manganese as phosphate in, ii, 223.
Asparagine, physiological relations of, ii, 636.
Asparagine and aspartic acid, i, 457.
Asparagine and protein, relation between, ii, 199.
Aspartic acid and asparagine, i, 457.
Atacamite, i, 284.
Atmosphere free from carbonic anhydride, vegetation of maize commenced in an, i, 224.
Atmosphere and plants, exchanges of gas between, ii, 350.
Atmospheric action, resistance of aluminium to, ii, 945.
Atmospheric ozone, gravimetric determination of, ii, 916.
Atomic weights, latent heats and tensions of vapours, simple relations between, i, 162.
Atoms, absolute weight of, i, 31.
Atralinic acid, ii, 786.
Atranoric acid, a new acid from *Lecanora atra*, ii, 786.
Atropa Belladonna, chemico-legal examination of, ii, 934.
—— —— fluorescent body in, i, 213.
Atropine, i, 93.
—— pharmacological group of, ii, 196.
Augite-diorite, from Little Falls, Minnesota, ii, 721.
Augite quartzose-diorite from Watab, Minnesota, ii, 723.
Aurantia, i, 310.
Auriferous cobalt, from Grant Co., Oregon, ii, 854.
Aurin, transformation of, into rosaniline, ii, 121.
Australene, nitroso-, i, 556.
Avogadro's law, researches on, ii, 569.
Avogadro and Ampère, law of, ii, 404.
Azobenzene, action of antimonious chloride on, ii, 325.
—— new mode of formation of, i, 206.
Azobenzene-dimethylamidobenzene, ii, 456.
Azobenzene-diethylamidocarboxylbenzene, ii, 455.
Azobenzene-dimethylamidocarboxylbenzene, ii, 455.
Azocarboxylbenzene-dimethylamidobenzene, ii, 456.
Azo-compounds, amido-, action of amides on, ii, 453.
Azo-compounds of the tolyl series, ii, 453.
Azo-compounds of diphenyl, ii, 341.
Azo-compounds of methazonic acid, ii, 325.
Azonaphthalene, ii, 623.
Azoparatolylmethazonic acid, ii, 326.

Azosulphoxylbenzene - dimethylamido - benzene, ii, 456.

B.

Balance-sheet (1876–77), i, 529.
Balsam of tolu, constituents of, i, 720.
Baltic peat, ii, 798.
Barite crystals from the Last Chance Mine, Morgan Co., Missouri, ii, 716.
Barium, estimation of, with potassium bichromate, i, 227.
Barium carbonate, action of sodium oxalate on, ii, 249.
Barium iodide, constitution of crystals of, ii, 839.
Barium oxalate, action of sodium carbonate on, ii, 249.
Barium silicate, crystallised, i, 442.
Barium sulphate precipitates obtained in quantitative analyses, purification of, i, 737.
Bark of the willow, acid of the, ii, 905.
Barks of the oak, willow, and elm, chemistry of the, i, 720.
Barley, estimation of, in oatmeal, i, 348.
—— experiments with, ii, 351.
—— microzymes of germinated, as producers of diastase and synaptase, i, 106.
Barley and malt, organic constituents of, i, 224.
Baryta, precipitation of phosphoric acid by ammonia in presence of, i, 578.
Basalt, the occurrence of native iron in, ii, 578.
Basalt of the Schiffenberg, near Giessen, ii, 579.
Base, $C_{13}H_{13}N$, from aniline-tailings, ii, 606.
Base derived from a waste-product in the aniline manufacture, ii, 762.
Bases, absorption of, by the soil, ii, 913.
Bastian's archibiosis, a contribution to, ii, 632.
Bastite from Elba, ii, 719.
Batrachians, formation of pepsin in, i, 100.
Beechwood tar, constituents of creasote from, ii, 888.
Beer, analyses of, ii, 953.
—— characters of the normal constituents of, as tested by the Stas-Otto and Dragendorff methods, ii, 809.
—— detection of picric acid in, ii, 232.
—— examination of, ii, 372.
—— salt in, ii, 940.
Beer, substance in, resembling cinchonine, i, 325.
—— testing of, ii, 232.
Beer-wort, peptones of, ii, 521.
Beeswax, cerotic acid from, i, 454.
—— testing of, for resin, ii, 642.
Beet, red, detection of, in wine, ii, 937.
Beet-root molasses, products obtained by calcining in close vessels the residues obtained in the fermentation of, ii, 240.
—— —— products of the dry distillation of the "vinasse" from, ii, 379.
Beets, presence of sugar in the leaves of, i, 336, 487.
Beet-sugar, use of phosphoric acid in the manufacture of, i, 357.
Benzacetic acid, metanitro- and metamido, ii, 617.
Benzaldehyde, acetylpara-, ii, 893.
—— hydrosulphobromo-, i, 468.
—— para-oxy-, i, 84.
—— paraoxy-, derivatives of, ii, 893.
Benzaldehydesulphinic acid, bromo-, i, 468.
Benzaldehydo-acetic acid, acetylpara-, ii, 893.
Benzamide, thio-, action of nascent hydrogen on, ii, 887.
Benzanilide, action of phosphorus pentachloride on, ii, 187.
Benzene, action of antimony trichloride on, ii, 551.
—— action of stannic chloride on, ii, 324.
—— action of tin tetrachloride on, ii, 552.
—— condensation-products of the orthohomologues of, i, 459.
—— chlorinated derivatives of, i, 706.
—— laws of substitution in, ii, 324.
—— oxychlorination of, ii, 748.
—— presence of, in coal-gas, ii, 447.
Benzene formula, Ladenburg's, ii, 190.
Benzene formulæ, ii, 747.
Benzene and its homologues, hydrogenisation of, ii, 445.
Benzene, azo-, new mode of formation of, i, 207.
Benzene, chloracetyl-, action of ammonia on, i, 459.
Benzene, chloro-, decomposition of, by heat, ii, 885.
Benzene, α-dicyano-, i, 81.
Benzene, β-dicyano, i, 81.
Benzene, α-dinitrochloro-, action of, on acetamide, i, 473.
—— —— action of, on amido-compounds, i, 90.
—— —— action of, on carbamide, i, 473.
Benzene disulphide, new method of con-

verting into benzene hydrosulphide, ii, 749.
Benzene, disulphocyano-, ii, 325.
Benzene hydrocarbons, formation of, by dry distillation, ii, 444.
Benzene hydrosulphide, new method of converting benzene disulphide into, ii, 749.
—— —— preparation of, from benzenesulphinic acid, ii, 749.
Benzene, iodo- and bromo-compounds of, i, 307.
Benzene, isobutyl-, preparation of, ii, 885.
Benzene, isopropylallyl-, ii, 664.
Benzene, isopropylbutenyl-, ii, 665.
Benzene, isopropylvinyl-, i, 401; ii, 663.
Benzene, paradibromo-, preparation of durene from, ii, 751.
Benzene, phospho-, and phenylphosphine, ii, 450.
Benzene, propyl-, i, 707.
Benzene, propyl-isopropyl-, synthesis of, i, 77.
Benzenes, tetrachloro-, i, 707.
Benzenes, trichloro-, i, 706.
Benzene- and toluene-dioxysulphide, new formations of, i, 463.
Benzene and paratoluene disulphide, formation of, i, 306.
Benzene and paratoluene sulphydrates, preparation of, i, 306.
Benzenedisulphinic acid, i, 312.
β-Benzenedisulphonic acid, derivatives of, i, 81.
Benzenedisulphonic acid, derivatives of meta-, ii, 771.
Benzenedisulphonic acid, paradibromo-, ii, 769.
Benzenedisulphonic acids, bromamido-, ii, 773.
Benzenedisulphonic acids, two, and their relations, i, 80.
α-Benzenedisulphonic chloride, i, 81.
β-Benzenedisulphonic chloride, i, 81.
Benzenesulphamide, dibromo-, ii, 609.
Benzenesulphamide, iodo-, ii, 611.
Benzenesulphamide, nitrobromo-, ii, 609.
Benzenesulphamide, paradibromo-, ii, 610.
Benzenesulphamide, tetrabromo-, ii, 464–8.
Benzenesulphamides, nitrotribomo-, ii, 463–7.
Benzenesulphamides, tribromo-, ii, 462–5–7–9.
Benzenesulphinic acid, new method of preparing, i, 312.
Benzene-sulphinic acid, preparation of benzene-hydrosulphide from, ii, 749.
Benzenesulphochloride, iodo-, ii, 611.
Benzenesulphochloride, dibromo-, ii, 609.
Benzenesulphochloride, nitrobromo-, ii, 609.
Benzenesulphochloride, paradibromo-, ii, 610.
Benzenesulphochlorides, tetrabromo-, ii, 464–8.
Benzenesulphochlorides, nitrotribromo-, 463–7.
Benzenesulphochlorides, tribromo, ii, 462–5–7–9.
Benzenesulphonate of ethyl, i, 463.
Benzenesulphonate of silver, action of bromine on, ii, 459.
Benzenesulphonate of silver, metabromo-, action of bromine on, ii, 459.
Benzenesulphonic acid and its derivatives, i, 595.
Benzenesulphonic acid, amidobromo-, ii, 192, 610, 770.
—— —— amidoparadibromo-, ii, 769.
—— —— dibromamido-, ii, 192.
—— —— a new dibromo-, ii, 460.
—— —— dinitro-, ii, 751.
—— —— iodo-, ii, 770.
—— —— metabromo-, i, 595; ii, 458.
—— —— metamido, ii, 192, 610.
—— —— monobromamido-, ii, 192, 608.
—— —— nitroamido-, i, 597.
—— —— nitrobromo, ii, 610.
—— —— nitroparadibromo-, ii, 768.
—— —— orthamido-, ii, 608.
—— —— orthiodo-, ii, 193, 611.
—— —— orthobromo-, ii, 192, 608.
—— —— orthochloro-, ii, 193, 610.
—— —— orthodibromo-, i, 595.
—— —— paradibromo-, ii, 610.
—— —— paradibromo- and some derivatives, ii, 767.
—— —— tribromo, i, 595; ii, 769.
Benzenesulphonic and paratoluenesulphonic acids, experiments for preparing the thio-ethers of, i, 469.
Benzenesulphonic acids, replacement of bromine and sulphonyl by hydrogen in the, ii, 191.
—— —— amidodibromo-, ii, 465–8.
—— —— amidodibromoazo-compounds of, ii, 465–8.
—— —— amidotribromo-, ii, 463–7.
—— —— diazo-compounds of amidotribromo, ii, 463–7.
—— —— nitrotribromo-, ii, 462–7.
—— —— nitrotribromo-, salts of, ii, 463–7.
—— —— ortho-, ii, 191.
—— —— tetrabromo-, ii, 464–7.
—— —— tribromo-, ii, 461–5–9.
—— —— tribromo, salts of, ii, 462, 465, 466, 469.
Benzenyldiphenylamidine, isomeride of, ii, 886.

Benzide, oxysulpho-, crystalline form, specific gravity, and molecular volume of, i, 79.
Benzoates, thio-, of phenyl and paratolyl, i, 468.
Benzoic acid, benzonitro-, ii, 483.
—— —— diazo-, constitution of compounds of, i, 474.
—— —— diethylamido-, ii, 334.
—— —— diethylamido-, action of diethylaniline on, ii, 335.
—— —— heminitratorthodiazo-, i, 475.
—— —— hydrodiazo-, i, 475.
—— —— hydrosulphobromo-, i, 468.
—— —— nitrato-orthodiazo-, i, 474.
—— —— paradiethylamido-, ii, 334.
—— —— paramido-, preparation of, ii, 615.
—— —— paraoxy-, action of chloroform on, in alkaline solution, i, 83.
—— —— sulphatometadiazo-, i, 475.
—— —— two-fifths sulphatometadiazo-, i, 475.
—— —— sulphiparabromo-, i, 468.
—— —— sulphoparabromo-, i, 82.
—— —— sulphoparabromo-, action of zinc-dust on the chlorides of, i, 468.
—— —— sulphoparachloro-, i, 82.
Benzoic acids, three dichloro-, ii, 781.
—— —— nitro-, ii, 483, 782–3.
—— —— orthonitrometabromo-, action of potassium cyanide on, i, 311.
—— —— oxy-, the three isomeric, ii, 337.
Benzoic and gallic acids, action of sulphuric acid upon a mixture of, ii, 894.
Benzoic aldehyde, acids from, i, 389.
—— —— reaction of, with orthotolylenediamine, ii, 753.
—— —— paraoxy-, nitro-derivative of, ii, 781.
Benzoin, deoxy-, some derivatives of, ii, 194.
Benzonitrobenzoic acid, ii, 483.
Benzophenone, ammonia-derivatives of, ii, 614.
Benzotrichloride, action of, on phenol, ii, 327.
Benzoyl chloride, action of, on some amides, i, 614.
—— —— action of, on dimethylaniline, ii, 334.
Benzoyl cyanide, properties of the acid, $C_9H_6O_3$, from, ii, 616.
Benzoylacetoacetic ether, ii, 437.
Benzoyl-allophanic ether, i, 615.
Benzoyl-amidophenol, i, 303.
Benzoyl-compounds of orthoparamidophenol, ii, 193.
Benzoyl-dimethylaniline, ii, 606.
Benzoyl-isophthalic acid and benzylisoxylene, i, 469.
Benzoyl, nitro-, i, 315.
Benzoylsulphocarbimide, action of alcohols of the fatty series on, i, 709.
Benzoyl-tropine, ii, 197.
Benzyl, action of nitrils on the haloïd ethers of, i, 466.
Benzyl alcohol, action of sulphuryl chloride on, ii, 288.
Benzylacetoacetic ether, ii, 438.
Benzylammonium, triethyl-, iodide of, ii, 606.
Benzyl (di-), formation of toluene from, i, 74.
Benzyl iodide, action of silver nitrite on, i, 310.
Benzyl- and dibenzyl-acetic acids, ii, 617.
Benzylisoxylene and benzoylisophthalic acid, i, 469.
Benzyl-selenureas, ii, 189.
Bergamot, terpene from, i, 560.
Bertholletia excelsa, protein crystalloids from, ii, 200.
Beryl from Eidsvold, Norway, ii, 174.
Beryls and emeralds, analysis of, ii, 574.
Bessemer steel, occluded oxygen in, ii, 815.
Betaine, preparation of, ii, 627.
Betulin, i, 94.
Betulinamaric acid, i, 95.
Betulinic acid, i, 96.
Bicarbonates in waters, application of the ferroso-pyrogallic reagent to the estimation, i, 340.
Bile, action of, on peptones, ii, 347.
Bile-acids, derivatives of the, i, 481.
Biotite, lithia-bearing variety of, i, 56.
Birch-sap, ii, 212.
Bismuth, detection of, by von Kobell's test, ii, 922.
—— electro-chemical deposition of, i, 161.
—— estimation of, with potassium bichromate, i, 227.
—— method for detecting small quantities of, ii, 45.
—— new salts of, and their use in the detection of potash, i, 50.
—— preparation of pure, and of bismuth compounds, i, 283.
—— volumetric estimation of, i, 658; ii, 674.
Bismuth compounds, i, 24, 645; ii, 40, 128.
Bismuth ferricyanide, i, 655; ii, 40.
Bismuth ferrocyanide, i, 653.
Bismuth hydrates, i, 647.
Bismuth mercaptide, ii, 295.
Bismuth nitrates, ii, 572.
Bismuth oxide, solubility of, in sodium carbonate, i, 490.

Bismuth oxide and oxybromides, action of ammonia on, i, 27.
Bismuth oxides, i, 649.
Bismuth sulphide, blowpipe examination of silver chloride, bromide, and iodide by means of, ii, 356.
Bismutho-tetrabismuthyl dichromate, i, 645.
Bismutho-thioglycollic acid, ii, 596.
Bismuthous oxide, action of chlorine and bromine on hot, i, 26.
Bismuthyl dichromate, monohydrated, i, 645.
Bitter almond oil, artificial, i, 315.
Black-blue colour for paper, i, 361.
Bladder senna, gases in the fruit of the, i, 105.
Blast-furnace gases, combustibility of, ii, 376.
Blast-furnaces, deposition of carbon and other bodies from the gases of, ii, 375.
Blood, absorption of carbon dioxide by, ii, 630.
—— action of sodic hyposulphite on the hæmatin of, ii, 346.
—— critical experiments on the formation of sugar in the, i, 485.
—— distribution of the carbonic anhydride contained in the, between the corpuscles and the serum, ii, 909.
—— experiments showing that the poisonous properties of putrefied, arise from organised ferments, ii, 506.
—— physiology of sugar in relation to the, ii, 909.
—— quantitative analyses of, i, 215.
—— relation of chlorophyll to the colouring matter of, ii, 208.
—— spectroscopic estimation of the amount of hæmoglobin in human, ii, 808.
—— spectroscopy of the colouring matters of the, i, 351.
—— testing of aqueous liquids for, i, 754.
—— urea in, i, 329, 486.
Blood of wild graminivorous animals, normal presence of copper in, ii, 346.
Blood and stomach, action of fuchsine introduced into the, i, 487.
Blood-ash, analysis of, ii, 940.
Blowpipe, cheap gas, ii, 275.
Blowpipe reactions, i, 489; ii, 216.
Bodies, a new method for the determination of the specific gravity of easily decomposible, ii, 697.
Bodies, fatty, reactions of, under energetic chlorination, ii, 726.
Body-temperature and tissue-metamorphosis in amphibia, relation between, i, 327.
Boiler-incrustation, analysis of a, ii, 919.
Boiler-incrustations, composition of, ii, 814.
—— —— prevention of, ii, 244.
Boiling points, accurate method of determining, with small quantities of liquid, i, 680.
—— —— Kopp's law of constant differences of, ii, 822.
Boletus luridus, colouring-matter of, ii, 791.
Bone-charcoal, reducing action of, at low temperatures, ii, 582.
Bone-glass, manufacture of, ii, 946.
Bones, can inorganic constituents be withdrawn from the, by the introduction of lactic acid into the intestines? i, 216.
Bones, loss of lime in the, on an insufficient supply of lime, ii, 792.
Bones of a carnivorous animal, researches on the, i, 328.
Borates, action of, on vegetation, i, 223.
Borax, octohedral, ii, 112.
Boric acid, action of, on vegetation, i, 223.
—— —— new qualitative reaction of, ii, 352.
—— —— quantitative determination of, by baryta, i, 736.
Boric ether, peculiar decomposition of, ii, 874.
Boron, i, 273.
Boron fluoride as a dehydrating agent in organic chemistry, ii, 866.
Bournonite from Waldenstein, Carinthia, i, 583.
Brain, occurrence of nuclein in human, i, 221.
Brain-matter, some volatile products of the putrefaction of, i, 730.
Branches, influence of flowering, on the nature and quantity of the sugar contained in the flower-stem of the agave, ii, 506.
Brandying, influence of, on the weight of the dry extract of wine, i, 750.
Brazilein, ii, 194.
Brazilin, ii, 193.
Brazilin, chloro- and bromo-, ii, 194.
Brazilin, tetraceto-, ii, 193.
Brazil-wood, detection of, in wine, ii, 935.
Bread, detection of alum in, i, 231.
—— estimation of alum in, ii, 510.
Bread-making in the United States, i, 240.
Bricks, quantitative analysis of, ii, 356.
Bromacetyl bromide, action of zinc-methyl on, ii, 588.

Bromal, action of, on oxy-acids, i, 59.
Bromhydrocotarnine, preparation of, ii, 529.
Brominated derivatives of hexane, ii, 867.
Bromine, action of, on acetone, i, 453.
—— action of, on hot bismuthous oxide, i, 26.
—— action of, on phenyl sulphocyanates, i, 67.
—— action of, on silver benzenesulphonate and metabromobenzenesulphonate, ii, 459.
—— action of, on sodium ethylate, i, 290.
—— displacement of chlorine by, from its compounds with the elements of the 1st, 2nd, 3rd, 4th, and 8th groups of Mendelejeff's natural system, ii, 109.
—— results of the exhaustive action of, on aromatic bodies, i, 300.
Bromine, chlorine, iodine, sulphur, phosphorus, and arsenic, new method for the gravimetric or volumetric determination of, in organic substances and in vegetable and animal compounds, i, 739.
Bromine and hydrogen dioxide, i, 22.
Bromine, silver oxide, and water, product of the oxidation of glycogen with, i, 64.
Bromine and sulphonyl, replacement of, by hydrogen in the benzenesulphonic acids, ii, 191.
Bromine and sulphur bromide, behaviour of, to sulphuretted hydrogen, i, 272.
Bromine-compounds, heat of solution of, ii, 693.
Bromo-compounds of benzene, i, 307.
Bromocotarnine, derivatives of, ii, 534.
Bromodichromazin, ii, 778.
Bromodimethylaniline, ii, 603.
Bromoform, ii, 293.
Bromoform, iodoform, &c., new formation of, ii, 423.
Bromonitrophenylacetic acids, two isomeric, ii, 482.
Bromopurpurin, ii, 625.
Bromotarconine, ii, 541.
Bronzes, phosphorus-, and their uses, ii, 376.
Brown-coal, analyses of, ii, 850.
Brucine, action of dilute nitric acid on, ii, 499.
Brucine, crystalline form of, ii, 628.
Brucine and strychnine, polysulphydrates of, ii, 905.
Bubbles, attraction and repulsion of, by heat; and on the constant vibration of minute bubbles, ii, 271.
Bunsen lamp, theory of the, i, 627.
Bunsen's method for the estimation of nitrogen in nitrates, ii, 799.
Butenylanisoïl, para-, ii, 670.
Butenylbenzene, ii, 667.
Butenylbenzene, isopropyl-, ii, 665.
Butter analysis, i, 233, 348.
Butter-fat, its analysis and composition, ii, 519.
Butyl alcohol, iso-, action of sulphuryl chloride on, ii, 288.
Butyl, di-iso-, derivatives of, i, 541.
Butylene, di-iso-, i, 448.
Butylene, furfuro-, ii, 746.
Butyl-ethyl sulphate, ii, 290.
Butyl-methyl sulphate, ii, 291.
Butylsulphinic acid, iso-, ii, 735.
Butyric acid, ethoxyiso-, ii, 313.
Butyric acid, monobromiso-, action of alcoholic potash on, ii, 313.
Butyric acid, α-oxy-, synthesis of, i, 60.
Butyric acid, trichloro-, action of potash on, i, 59.
Butyric and acetic ethers of quercite, ii, 877.
Butyrone, oxidation of, ii, 426.

C.

Cacao, contributions to the chemical knowledge of, ii, 363.
Cacao-fat, ii, 363.
Cadmium, electro-chemical deposition of, i, 161.
Cadmium in presence of zinc, detection of, i, 490.
Cadmium, double haloïd salts of, i, 689.
Cadmium mercaptide, ii, 295.
Cadmium sulphide, some properties of, ii, 843.
Cadmium and magnesium, action of, on nitric acid, ii, 77.
Cadmium-glycollic acid, ii, 596.
Cæsium, preparation of, from lepidolite, ii, 706.
Cæsium and rubidium compounds, i, 685.
Cæsium silicotungstate, i, 175.
Caffeine, extraction of, ii, 500.
—— extraction of, from guarana, ii, 627.
—— homologue of, i, 93.
—— rapid extraction of, ii, 344.
Calcite, new combination of Elba, and a rare development of a crystal of calcite from Oberstein, ii, 170.
—— pseudomorph of, after augite, i, 696.
—— pseudomorph of, after gay-lussite, i, 698.

Calcium carbonate, action of sodium oxalate on, ii, 245.
—— —— action of tartaric acid on, ii, 647.
Calcium chloride, manufacture of, from blast-furnace slags, ii, 239.
—— —— mode of action of, in the coagulation of fibrin, i, 727.
Calcium oxalate, action of sodium carbonate on, ii, 246.
Calcium phosphate, di-, crystallised, i, 689.
Calcium salts, plant-nourishing value of, i, 735.
Calcium sulphate, action of, on the sulphates of the alkalis, i, 440.
—— —— some compounds of, ii, 399.
—— —— some double salts, i, 167.
Calcium and sodium hypochlorites, action of, on urea, ii, 226.
Callainite of Damour and variscite of Breithaupt, identity of the so-called peganite of Arkansas with the, ii, 852.
Calomel, dissociation of the vapour of, i, 47.
Camphols, rotatory power of the isomeric, i, 78; ii, 626.
Camphor, oxidation of, ii, 903.
Camphor, patchouli, i, 478.
Camphor, primula-, primulin, and cyclamin, ii, 903.
Camphor-derivatives, crystallo-optical investigation of, i, 594.
Camphoric acid, constitution of, ii, 446.
Cane-sugar, effects of heat on, in aqueous solution, i, 450.
—— specific rotatory power of, ii, 875.
Cantharides, decomposition of cantharidin in, i, 722.
Cantharidin in cantharides, decomposition of, i, 722.
Caoutchouc solution, i, 363.
Capillarity, researches on the coefficient of, i, 573.
Capillary affinity, i, 166.
Capillary phenomena, electro-, ii, 820.
Caproic acid, normal, ii, 879.
—— —— valeric acid from normal, i, 590.
Caproic aldehyde, ii, 880.
Caprone, ii, 880.
—— oxidation of, ii, 426.
Capsaicin, i, 720.
Caragheen-sugar, i, 65.
Caraway, terpene from, i, 560.
Carbacetoxylic acid, conversion of α-dichloropropionic acid into, ii, 181.
Carbamide, action of α-dinitrochlorobenzene on, i, 473.
Carbanilide, action of nitric acid on, ii, 886.
Carboazotin, a new explosive substance, i, 119.
Carbodiphenylimide and phenylparatolylcarbamide, ii, 886.
Carbohydrate in milk, new, ii, 519.
Carbohydrates, physiology of, ii, 503.
Carbolic acid and creasote, ii, 515.
Carbolic and nitric acids, tests for, ii, 919.
Carbometer, analysis of carbonates by means of the, ii, 38.
Carbon, ash of hard, from coal-gas retorts, i, 355.
—— calculation of the percentage of chemically combined, in analyses of steel by Eggertz's colorimetric method, i, 742.
—— estimation of, in iron and steel, ii, 927.
Carbon points for the electric light, effect produced by the admixture of foreign substances with charcoal in the production of, ii, 104.
—— —— —— manufacture of, ii, 270.
Carbon chlorobromide from trichloracetic acid, ii, 422.
Carbon-compounds, new method of analysing, ii, 509.
—— quantitative analysis of a mixture of, ii, 929.
—— use of platinum in the ultimate analysis of i, 228.
Carbon-compounds in meteorites, i, 288.
Carbon dioxide, absorption of, by blood, ii, 630.
Carbon dioxide and phenol, polybasic acids derived from, ii, 485.
Carbon disulphide as an antiseptic, i, 124.
—— —— estimation of, in alkaline sulphocarbonates, i, 744.
—— —— process of solidification of, ii, 419.
Carbon mercaptides, ii, 296.
Carbon monoxide, an absorbent of, ii, 725.
—— —— detection of, ii, 640.
Carbon oxysulphide, action of, on aqueous ammonia, ii, 307.
Carbon sulphide, copper salts, and caustic alkalis, determination of, by xanthate of potassium, ii, 929.
Carbon tetrachloride, action of, on phenol in alkaline solution, i, 77.
Carbon tetrachloride and its use as an anæsthetic, ii, 912.
Carbon and other bodies, deposition of, from the gases of blast-furnaces, ii, 375.
Carbonate of calcium, action of tartaric acid on, ii, 647.
Carbonate of lead, crystallised, formed on objects found at Pompeii, ii, 843.

Carbonate of lead, solubility of, in ammonium butyrate, i, 283.
Carbonate of potassium, method of increasing the yield of, from molasses, ii, 816.
Carbonates, action of solutions of alkaline, on earthy oxalates, ii, 245.
—— action of solutions of the alkaline oxalates on earthy, ii, 245.
—— analysis of, by means of the carbometer, ii, 38.
—— detection of, by the blowpipe, i, 490.
Carbonic acid, absorption of, by vegetable cell-walls, ii, 348.
—— —— decomposition of potassium cyanide, zinc cyanide, and potassium formate in, i, 66.
—— —— decomposition of, in the solar spectrum by the green parts of plants, ii, 635.
—— —— volumetric determination of, ii, 207.
Carbonic acid springs of the Kyll-Thal in Eifel, i, 448.
Carbonic acid and light, action of, on potassium iodide, ii, 706.
Carbonic anhydride, distribution of, in close rooms, ii, 810.
—— —— distribution of the, contained in the blood between the corpuscles and the serum, ii, 909.
—— —— vegetation of maize commenced in an atmosphere free from, i, 224.
—— —— fermentation of fruits plunged into, i, 106.
Carbonic oxide, action of, on plants, i, 334.
Carbotriphenyltriamine, ii, 448.
Carbonyl-hæmoglobin, conversion of, into oxyhæmoglobin, ii, 346.
Carbousnic acid, ii, 896.
Carminic acid, action of iodine on, i, 347.
Casein, mode of action of, in the coagulation of fibrin, i, 727.
Cassava, prussic acid from, ii, 515.
Castor and other fixed oils, method of detecting and estimating, in balsam of copaiba, ii, 374.
Castor oil, testing of, ii, 364.
Catalysis, dissociation of hydrocarbons by means of palladium wire, and on the similarity of these phenomena to those of, ii, 830.
Catechin, ii, 488.
—— behaviour of, to potassium hydrate, ii, 490.
Catechins, ii, 892.
Cat's-eye quartz, ii, 411.
Celandine (*Chelidonium majus*), alkaloïds of, i, 477.
Cells, diffusion of vapours through porous, ii, 835.
Cellular tissue of plants, nutritive value of, ii, 347.
Cellulose, i, 229.
Cellulose, gum, and glycerin, studies on, ii, 876.
Cellulosic fermentation produced by vegetable organs, and probable utilisation of sugar for the production of cellulose in vegetation, i, 106.
Cements, valuation of, ii, 801.
Cerisin and Galician ozokerite, ii, 284.
Cerium-group, atomic weights of the metals of the, i, 282.
Cerium, lanthanum, and didymium, specific heats and atomic weights of, i, 50.
Cerotic acid from beeswax, i, 454.
Chabasite and christianite, simultaneous formation of, under the influence of hot springs, ii, 444.
Chabasite from Puy-de-Dôme, ii, 283.
Chalcedony-amygdaloïd filled with water, ii, 860.
Chalcedony, pseudomorphs of, i, 692, 695, 696.
Chamomile oil, acids in Roman, i, 97; ii, 429.
Charcoal, bone-, reducing action of, at a low temperature, ii, 582.
Charcoal, effect produced by the admixture of foreign substances with, in the production of carbon points for the electric light, ii, 104.
Chemical action, velocity of, ii, 831.
Chemical actions, effect of light on, ii, 818.
Chemical affinity, i, 165.
—— —— theory of, ii, 403.
Chemical compounds, spectra of, ii, 688.
Chemical demonstrations, use of the magic lantern in, i, 683.
Chemical equivalents, relation between the absorbing powers of bodies for heat and their, i, 430.
Chemical reactions, retardation of, by indifferent substances, i, 42.
Chemical Society, anniversary meeting of the (March 29, 1877), i, 493.
—— —— balance-sheet, March 28, 1876, to March 27, 1877, i, 529.
—— —— donations to the library of the, ii, 961.
—— —— obituary notices of deceased Fellows of the, i, 493—514.
Chessylite, pseudomorph of, after cuprite, i, 697.
Chicory, testing of roasted coffee for, i, 752.
Chili saltpetre, decomposition of am-

moniacal distillation-products by, ii, 238.
Chinoline, transformation of, into aniline, ii, 499.
Chinoline series, studies on the, ii, 499.
Chloracetic acid, mono-, action of on thiocyanic acid and its salts, ii, 872.
Chloracetic acid, tri-, carbon chlorobromide from, ii, 422.
Chloracetones, mono-, ii, 427.
Chloracetylbenzene, action of ammonia on, i, 459.
Chloracrylic acid, di-, ii, 591.
Chloracrylic acid, mono-, ii, 592.
Chloral, action of amines on, ii, 586.
—— action of, on cyanamide, ii, 306.
—— action of, on oxy-acids, i, 59.
—— contributions to the history of, ii, 584.
Chloral cyanide-cyanate and its derivatives, i, 67.
Chloral ethylate, ii, 878.
Chloral, hexylic, ii, 586.
Chloral hydrate, action of potassium sulphydrate on, i, 188.
—— —— vapour of, ii, 829.
Chloral and acetyl chloride, combination of, i, 188.
Chloral and its hydrate, thermo-chemistry of, ii, 827.
Chloral-ammonia, action of acetyl chloride or acetic anhydride on, ii, 308.
Chloral-ammonia, monacetyl-, action of acetyl chloride on, ii, 308.
Chloral-ammonia and aldehyde-ammonia, constitution of, ii, 308.
Chloranhydrides of the sulphonic acids, formation of sulphuric acids of the fatty group from the, ii, 734.
Chloranilic acid and nitrotoluquinone, ii, 476.
Chlorates and chloric acid, thermal conditions of the formation of, ii, 825.
Chloric acid, heat of formation of, ii, 696.
Chloride of lime, chemical constitution of, i, 279.
Chlorides, acid, action of, on organo-zinc compounds, ii, 732.
Chlorides, action at a high temperature of certain volatile metallic, on certain hydrocarbons, ii, 551.
Chlorinated acetophenone, ii, 327.
Chlorinated acids, simple method of preparing, ii, 590.
Chlorinated acrylic acids, ii, 591.
Chlorinated anilines, i, 473.
Chlorination, reactions of certain fatty bodies under energetic, ii, 726.
Chlorination, results of an exhaustive, of aromatic substances, i, 299.
Chlorine, action of, on acetonitril, i, 297.
—— action of, on hot bismuthous oxide, i, 26.
—— action of, on isopentyl (or amyl) acetoacetate and acetoethylacetate, ii, 436.
—— Deacon's process for the preparation of, i, 350.
—— estimation of, in presence of phosphoric acid by silver nitrate and potassium chromate, i, 226.
—— estimation of, by silver nitrate and potassium bichromate in presence of other salts, ii, 916.
—— experiments on the displacement of, by bromine from its compounds with the elements of the 1st, 2nd, 3rd, 4th, and 8th groups of Mendelejeff's natural system, ii, 109.
—— influence of water on the action of, on iodine, ii, 276.
Chlorine-compounds, heat of solution of, ii, 693.
Chlorine, bromine, iodine, sulphur, phosphorus and arsenic, new method for the gravimetric and volumetric determination of, in organic substances, and in vegetable and animal compounds, i, 739.
Chlorine residues, preparation of pure manganese chloride from, ii, 169.
Chlorine and hydrogen dioxide, i, 22.
"Chloritic formation," rocks of the, on the western border of the New Haven region, i, 286.
Chlorobenzene, decomposition of, by heat, ii, 885.
Chlorocarbonic acid, synthesis of organic acids and ketones by means of, ii, 334.
Chlorocarbonic ether, action of, on amidophenol, i, 472.
Chlorochromic acid, action of, on organic bodies, i, 384.
Chloroethylcrotonic acid, mono-, ii, 591.
Chloroform, action of, on aromatic oxy-acids in alkaline solution, i, 83.
—— action of sodium mercaptan on, ii, 293.
—— Dr. E. Davy's test for the purity of, i, 346.
Chloroform and ether, determination of alcohol in, ii, 930.
Chloroisopropylcrotonic acid, ii, 591.
Chloromaleic ether, action of potassium cyanide on, ii, 739.
Chloromethylcrotonic acid, mono-, ii, 591.
Chloropal from Mugrau, ii, 859.
Chlorophyll, ii, 629.
—— change of colour in, ii, 629.

Chlorophyll, function of, ii, 208.
—— function of, in the vine (*Vitis vinifera*), ii, 732.
—— new red-colouring matter accompanying, ii, 790.
Chlorophyll and its relation to the colouring-matter of blood, ii, 208.
Chloroplatinates, recovery of platinum from, ii, 574.
Chloroplatinites, ii, 276.
—— preparation of, ii, 276.
Chloropropylcrotonic acid, chloro-, ii, 591.
Cholesterin, i, 58.
—— action of potassium permanganate on, ii, 781.
Cholic acid, action of glycocine on, i, 481.
—— —— oxidation of, with potassium dichromate and sulphuric acid, i, 213.
Chologlycollic acid, i, 481.
Chondrodite, humite and lievrite, isomorphism and chemical constitution of, ii, 117.
Chondrus crispus, analysis of, ii, 210.
Christianite and chabasite, simultaneous formation of, under the influence of hot springs, i, 444.
Chromates of bismuth, i, 645.
Chromates, researches on the, ii, 847.
Chrome-iron and analogous compounds, preparation of, ii, 709.
Chrome-iron ore, analysis of, ii, 511.
—— —— constitution of, ii, 120.
Chrome-iron and steel, analysis of, ii, 357.
Chrome ores, analysis of, ii, 512.
Chrome ores of Greece, ii, 177.
Chromic acid, conversion of chromic hydrate and chromic chlorate into, ii, 846.
Chromic acid as a test for malic acid, ii, 807.
Chromic chlorate and chromic hydrate, conversion of, into chromic acid, ii, 846.
Chromic hydrate and chromic chlorate, conversion of, into chromic acid, ii, 846.
Chromite, occurrence of, in serpentine, ii, 120.
Chromium, Dittmar's method of determining the amount of, in chrome ores, i, 108.
—— estimation of, in steel and iron, ii, 802.
—— volumetric estimation of, ii, 354.
Chromium and arsenic, compound of, i, 283.
Chromium and manganese with sodium carbonate, reactions of, i, 489.
Chromium, uranium, and iron, separation of, ii, 926.
Chrominm sesquioxide, salts of, ii, 407.
Chromyl dichloride, action of, on anthracene, ii, 494.
Chrysammic acid, i, 611.
Chrysazin, i, 611.
Chrysin, tectochrysin and higher homologues, ii, 343.
Chrysocolla, aluminous, from Utah, ii, 854.
Chrysocolla, notes on specimens of, ii, 575.
Chrysocolla and copper-pitchblende, analysis of, i, 55.
Chrysoïdin, ii, 243, 326, 457.
Chrysoïdin, diacetyl-, ii, 458.
Chrysolin, a new yellow dye derived from resorcin, ii, 889.
Chrysophanic acid, i, 610.
Chrysophanic acid, amido-, i, 614.
Cichorium intybus, a new glucoside in the flowers of, i, 477.
Cider apples, estimation of sugars and acid in six varieties of, ii, 514.
Cinchona trees, distribution of the alkaloïds in, ii, 636.
Cinchonidine, note on Weddell's paper concerning the substitution of, for quinine, ii, 344.
Cinchonidine sulphatoperiodides, i, 715.
Cinchonine, ii, 343.
—— substance in beer resembling, i, 325.
Cinchonine sulphatoperiodides, i, 714.
Cinchonines, bromo-, transformation of the three, into the corresponding oxybases, i, 323.
Cinnabar from Oregon, i, 284.
Cinnamene, isopropyl-, i, 400.
Cinnamenylacrylamide, i, 405.
Cinnamenylacryl chloride, i, 405.
Cinnamenylacrylic acid, i, 403.
Cinnamenylacrylic acid, hydro-, i, 405.
Cinnamenylangelic acid, i, 407.
Cinnamenylcrotonic acid, i, 405.
Cinnamic acid, addition-products of, ii, 431.
Cinnamic acid from benzoic aldehyde, i, 389.
Cinnamic acid, hydrocarbons obtained from the homologues of, ii, 660.
Cinnamic and other analogous acids, formation of, from the aromatic aldehydes, i, 388.
Cinnamic aldehyde, acids from, i, 403.
Citraconic acid, i, 591.
—— —— addition-products of, ii, 737.
—— —— the crotonic acid from, ii, 735.
—— —— a new derivative of, ii, 736.

Citraconic acid, dibromopyrotartaric acid from, ii, 738.
—— —— relation of, to mesaconic acid, ii, 430.
Citraconic anhydride, conversion of, into xeronic anhydride, i, 64.
Citrate of potassium and sodium, ii, 883.
Citric acid, i, 591.
Citric acid, thermo-chemical researches upon, i, 681.
Citric and aconitic acids, i, 456.
Clarifying of sugar, use of lime in the, i, 116.
Cloth and wool dyed green with picric acid, ii, 243.
Cloths, dyed, causes and prevention of stains, spots, and other defects in, i, 362.
Coal, determination of sulphur in, ii, 218.
Coal-formation of Bohemia, some minerals from the, resembling ankerite, and on the chemical constitution of the minerals classed with ankerite, i, 581.
Coal-gas, estimation of sulphur in, i, 492, 741.
—— of London, i, 621.
—— new method for the determination of sulphur in, i, 739.
—— presence of benzene in, ii, 447.
—— production of sulphuric acid by the combustion of, ii, 110.
—— some products of the action of red fuming nitric acid on, ii, 287.
—— products of combustion of, ii, 948.
—— proximate composition of, i, 230.
Coal-gas retorts, ash of hard carbon from, i, 355.
Coal-tar, occurrence of methylanthracene in, ii, 624.
—— occurrence of orthoxylene in, ii, 600.
Coal-tar oil, preparation of paraxylene from, ii, 600.
Cobalt, action of, on nitric acid, ii, 84.
—— auriferous, from Grant Co., Oregon, ii, 854.
—— electro-deposition of, ii, 375.
—— estimation of, in cobalt-potassium nitrite, ii, 511.
—— estimation of, by precipitation as oxalate, ii, 924.
Cobalt-ammonium chloride, ii, 709, 846.
Cobalt-ammonium compounds, ii, 845.
Cobalt mercaptide, ii, 295.
Cobalt-potassium nitrite, estimation of cobalt in, ii, 511.
Cobalt silicofluorides, i, 690.
Cobalt and nickel, estimation of, by electrolysis, ii, 925.
Cobalt and nickel, manufacture of large castings of, i, 238.
—— —— a natural hydrated oxide of, ii, 855.
—— —— separation of, ii, 925.
—— —— separation of arsenic from, ii, 573.
—— —— separation of, by xanthate of potassium, ii, 597.
—— —— thermo-chemical researches on, i, 574.
Cobalt, nickel, zinc, and manganese, separation of iron from, ii, 924.
Cobra de Capello, poison of the, ii, 206.
Cochineal, detection of, in wine, ii, 935.
Cochineal-red for woollen goods, ii, 380.
Cocoa, ii, 212.
Coelestine, occurrence of, in Keupermarls, and its influence on the constituents of plants, ii, 281.
Coffee, testing of, ii, 232.
—— testing of roasted, for chicory, i, 752.
Coffees, composition of, i, 752.
Colchicine, toxicological detection of, ii, 516.
Cold, influence of, on the curdling of milk, ii, 206.
Colein, researches on, i, 253.
Colouring-matter of *Boletus luridus*, ii, 791.
—— —— of the petals of *Rosa gallica*, ii, 502.
—— —— of *Velella limbosa*, ii, 791.
Colouring-matter, new red, accompanying chlorophyll, ii, 790.
Colouring-matter of viridic acid, i, 478.
Colouring-matters of the blood, spectroscopy of, i, 331.
Colouring-matters, detection of, in wine, i, 234.
—— —— identification of foreign, in red wine, i, 751.
—— —— methods of estimating methyl alcohol in the manufacture of, ii, 229.
—— —— organic, action of some reagents on, i, 310.
Colours, chemical investigation of twelve, found at Pompeii, i, 111.
—— uses of patent, i, 114.
Columbite from N. Carolina and Colorado, ii, 714.
Colutea arborescens (bladder senna), gases in the fruit of, i, 105.
Combustion, heat of, of the explosive mixture of hydrogen and oxygen in closed vessels, ii, 690.
—— point of, i, 42.
—— temperatures of, i, 680.
Compounds, formation of, at a temperature considerably above that of their decomposition, ii, 273.

Compounds, non-saturated, i, 61; ii, 429.
Compressibility of liquids, ii, 833.
Coniferyl and vanillin series, constitution of compounds of the, i, 87.
Conine, estimation of, ii, 386.
Conine, sparteine, and nicotine, improved method of obtaining, i, 714.
Constant temperatures, maintenance of, ii, 697.
Contact-zones of the aluminous slate and granite-block of Barr-Andlau, chemical examination of the, ii, 413.
Convolvulus Scammonia, chemical constituents of, ii, 904.
Copaiba, examination of commercial, ii, 932.
Copaiba testing, ii, 931.
Copaiba balsam, method of detecting and estimating castor and other fixed oils in, ii, 374.
Copper, action of different fatty oils on, i, 237.
—— action of, on nitric acid, ii, 60.
—— detection of, in cast-iron, steel, and wrought-iron, ii, 927.
—— detection of traces of, ii, 803.
—— determination of, in "ore reducer" slag, ii, 650.
—— estimation of, in vinegar, ii, 927.
—— extraction of, by an acid solution of ferrous chloride, ii, 934.
—— in food, ii, 511.
—— formation of moss, ii, 113.
—— influence exerted by ammonium sulphide in preventing the action of various solutions on, i, 642.
—— influence of the quantity and condition of the, on the copper-zinc couple, i, 56.
—— normal presence of, in the blood of wild graminivorous animals, ii, 346.
—— presence of, in cast-iron, i, 235.
—— in preserved green peas, ii, 511.
—— in vegetables, ii, 511.
Copper-glycerin solution, solubility of silk in an alkaline, ii, 379.
Copper phosphides, ii, 844.
Copper-pitchblende and chrysocolla, analysis of, i, 55.
Copper salts, caustic alkalis, and carbon sulphide, determination of, by potassium xanthate, ii, 929.
Copper solution, action of alkaline, on hydroxylamine, ii, 406.
Copper and sulphur, method of estimating, in cupreous iron pyrites, and in the burnt ore before and after lixiviation, ii, 650.
Copper-zinc couples, preparation of, i, 561.
Copper and zinc, crystalline phosphate and arsenate of, i, 690.
Copper and zinc, detection of, in the human body, ii, 928.
Corallin, constituents of, ii, 480.
Corks, renewal of old, ii, 244.
Corpuscles and serum, distribution of the carbonic anhydride contained in blood, between the, ii, 909.
Cotarnine, action of bromine on hydrobromide of, ii, 542.
Cotarnine, bromhydro-, preparation of hydrobromide of, from hydrocotarnine hydrobromide, ii, 529.
Cotarnine, bromo-, action of heat on hydrobromide of, ii, 535.
—— —— action of nascent hydrogen on, ii, 534.
—— —— derivatives of, ii, 534.
—— —— preparation of hydrobromide of, ii, 531.
Cotarnine, hydro-, preparation of hydrobromide of, ii, 529.
Cotarnine, tribromhydro-, action of alkalis and of silver hydrate on hydrobromide of, ii, 538.
—— —— action of heat on hydrobromide of, ii, 539.
—— —— action of water at 100° on hydrobromide of, ii, 537.
—— —— derivatives of hydrobromide of, ii, 537.
—— —— preparation of hydrobromide, of, ii, 532.
Cotarnine, narcotine, and hydrocotarnine, Part V; new cotarnine derivatives and nor-opianic acid, ii, 525.
Cotarnine, various experiments with, ii, 525.
Coto-barks, some constituents of, ii, 201.
—— —— and their crystalline constituents, i, 480.
Cotoïn, i, 480.
Cotoïn, hydro-, ii, 202.
Cotoïn, para-, ii, 201.
Cotton root-bark, analyses of, ii, 915.
Coumaric acid, acetylpara-, ii, 893.
Coumarin, acids from, i, 417.
—— formation of, and of cinnamic and other analogous acids from the aromatic aldehydes, i, 388.
—— synthesis of, from salicylic aldehyde, i, 708.
Coumarin derivatives, action of heat on some, i, 420.
Cray-fish shells and horn, composition of, i, 728.
Creasote from beech-wood tar, constituents of, ii, 888.
Creasote and carbolic acid, ii, 515.
Cresol and phenol, formation of rosolic acid from, ii, 888.
Cresols and cresotic acids, i, 708.

α-Cresyl-sulphuric acid, i, 206.
Cresylthiocarbamide, i, 70.
Crotaconic acid, a new isomeride of itaconic acid, ii, 592.
Croton oil, volatile acids of, ii, 593.
Crotonic acid, chloroisopropyl-, ii, 591.
—— —— from citraconic and mesaconic acids, ii, 735.
—— —— hydrobromocumenyl-, ii, 662.
—— —— monochloroethyl-, ii, 591.
—— —— monochloromethyl-, ii, 591.
—— —— monochloropropyl-, ii, 591.
—— —— phenyl-, i, 391.
Cryolite-glass, manufacture of, ii, 946.
Cryolite and pachnolite, ii, 281.
Crystal and glass, composition of ancient, i, 234.
Crystalline lens, chemistry of the, i, 222.
Cyrystallographical and mineralogical notices (v. Lasaulx), i, 53.
Crystals, symmetrical growth of circular polarising, ii, 115.
Cubebs, constituents of, ii, 344.
Cumarhydrin, para-, ii, 201.
Cumene, phorone-, ii, 447.
Cumenylacryl chloride, i, 399.
Cumenylacrylamide, i, 399.
Cumenylacrylic acid, hydro-, or cumenylpropionic acid, i, 400.
Cumenylacrylic acid, hydrobromo-, ii, 661.
Cumenylacrylic or isopropylphenylacrylic acid, i, 396.
Cumenylangelic acid, i, 402.
Cumenylcrotonic acid, i, 401.
Cumenylcrotonic acid, hydrobromo-, ii, 662.
Cumenylpropionic acid, i, 400.
Cuminaldehyde, derivatives of, ii, 894.
—— acids from, i, 396.
Cuminol, behaviour of, with potash, ii, 333.
Cumol, i, 593.
Cupreous iron pyrites, method of estimating copper and sulphur in, and in the burnt ore before and after lixiviation, ii, 650.
Cupric acetate, frequent occurrence of, in vinegar, ii, 927.
Cupric and ferric oxides, method of preparing, from the sulphates, so as not to obtain basic sulphates, i, 283.
Cuprocyanide of potassium, i, 456.
Cuprosothioglycollic acid, ii, 596.
Cutose, i, 230.
Cyanamide, action of chloral on, ii, 306.
—— constitution of, ii, 306.
—— conversion of, into diethylcyanamide, ii, 307.
Cyanic acid, structure of, i, 299.
Cyanic and cyanuric acids, structure of, i, 67.
Cyanide, mercuric, compounds of, with the chlorides of the earth-metals, ii, 423.
Cyanide of potassium, action of, on chloromaleic ether, ii, 739.
—— —— action of, on the isomeric orthonitrometabromobenzoic acids, i, 311.
—— —— pure commercial, ii, 423.
Cyanide of silver, action of, on dibromethyl bromide, ii, 869.
Cyanides of acid radicles, ii, 423.
Cyanides, simple method of preparing metallic, i, 591.
Cyanogen, action of, on albumin, ii, 907.
Cyanogen compounds of iron, ii, 597.
Cyanuric and cyanic acids, structure of, i, 67.
Cyanuric acid and guanamine, constitution of, i, 299.
Cyclamin, primulin, and primula-camphor, ii, 903.
Cyclamiretin, ii, 904.
Cymene, sulphuretted derivatives of, ii, 601.
Cystinuria, i, 101; ii, 793.

D.

Datholite, optical and thermic properties of, ii, 170.
Datura Stramonium, chemico-legal examination of, ii, 934.
Davyum, ii, 278, 712.
Decomposition, partial, ii, 725.
Dehydrating agents, action of, on anhydrides, ii, 486.
Dehydrotriacetonamine, ii, 591.
Deoxybenzoïn, some derivatives of, ii, 194.
Dephosphorisation of iron ores (Jacobi's method), i, 759.
Desilverisation of lead, ii, 947.
Developing liquid, alkaline iron, ii, 235.
Dextrin, schizomycetic fermentation of, ii, 214.
Dextrogyrate acid in wine, observations on a, i, 456.
Dextrose and levulose, derivatives of, ii, 583.
—— —— determination of, by an indirect method, ii, 641.
Diacetonamine chloride, action of hydrocyanic acid on, ii, 878.
Diacetyl-phthalein, i, 308.
Dialdol, some derivatives of, i, 588.
Diallyl carbinol, synthesis of, ii, 297.

Diallyloxalic acid, ii, 738.
—— —— synthesis of, ii, 882.
Diamagnetism of condensed hydrogen, ii, 820.
Diamidosulphobenzide-dicarbonic acid, ii, 619.
Diamond, crystallisation of the, ii, 717.
Diamond-bearing sand from Du Toit's Pan, South Africa, composition and origin of, ii, 280.
Diamonds, ii, 849.
Diamyl or di-isopentyl, ii, 260.
—— —— note on the discovery of, ii, 687.
Diastase and synaptase, microzymes of germinated barley and sweet almonds as producers of, i, 106.
Diastatic ferments, ii, 351.
Diathermaneity of metals and paper, ii, 405.
Diazobenzoic acid, constitution of compounds of, i, 474.
Diazo-compounds, action of, on tertiary amines, ii, 454.
—— —— new researches on, i, 474.
Dibenzamide, ethidene- and methene-, i, 314.
Dibenzylacetic acid, ii, 617.
Dibromacetic and glyoxylic acids, ii, 90.
Dibromethyl bromide, action of silver cyanide on, ii, 869.
Dibromobenzenesulphonic acid, a new, ii, 460.
Dicarbonic acid, diamidosulphobenzide-, ii, 619.
Dichloracetic acid, ii, 179.
—— —— preparation of, i, 59.
Dichlorinated naphthalene analogous to nitronaphthylsulphurous acid, i, 467.
Dichlorobenzoic acids, three, ii, 781.
γ-Dichloronaphthalene, derivatives of, ii, 901.
Dichloropropionic acids formed from dichloropropionitril, ii, 180.
Dichloropropionitril, constitution of, i, 298.
—— dichloropropionic acids formed from, ii, 180.
—— solid, ii, 182.
Didymium, specific heats of, i, 50.
Diethoxylethane, monochloro-, preparation of, i, 291.
Diethyl-methyl-acetic acid, i, 454.
Diethylmethyl sulphine, i, 186.
Diethylphenyl arsine, ii, 452.
Diets, situation of the deposit of fat in animals on different, ii, 791.
Diffusion-process (sugar), use of hydrochloric acid in the, i, 118.
Digestion and chemical structure amongst animals, differences between, ii, 202.
Digestion and fermentation of the neutral fats of food, prior to and during assimilation, some peculiar modifications of animal fats the result of, ii, 207.
Digestion of linseed-mucilage with artificial gastric juice, ii, 911.
Digestion, observations on, made through the agency of a gastric fistula, ii, 631.
Digestion of the perisperm (albumen), ii, 349.
Di-isobutyl, derivatives of, i, 541.
Di-isobutylene, i, 448.
Dikamali resin, ii, 501.
Dimethylaniline derivatives, ii, 601.
Dimethylaniline, reactions of, ii, 886.
Dinaphthyl, a new, ii, 559.
Dinaphthyls, structure of the three isomeric, ii, 563.
Dinas-crystals, so-called plastic, i, 354.
α- and β-Dinitronaphthalene, derivatives of, i, 466.
Diorite, augite-quartzose from Watab, Minnesota, ii, 723.
Diorite, quartzose, from Sauk Centre and Little Falls, Minnesota, ii, 723.
Diphenic acid, diamido-, ii, 902.
Diphenyl, azo-compounds of, ii, 341.
Diphenyl, chlorination of, ii, 898.
Diphenylamine, nitro-derivatives of, ii, 756.
Diphenylamine as a test for nitric and nitrous acids, ii, 918.
Diphenylarsinic acid, i, 311.
Diphenylcarbinol and some of its derivatives, i, 459.
Diphenyleneglycollic acid, ii, 336.
Diphosphophenyl, ii, 451.
Disinfecting powers of oxidised oil of turpentine, i, 184.
Dissociation, i, 433.
Distillation in a vacuum, apparatus for fractional, i, 682.
Disulphocyanobenzene, ii, 325.
Dithymyltrichlorethane, some derivatives of, i, 262.
Ditolyl, oxidation of, ii, 653.
Diureide, glyoxylic, identity of, with allantoïn, ii, 741.
Ductus choledochus, influence which the tying of, exerts upon the amount of glycogen in the liver, i, 221.
Dulcite, action of potassium permanganate on a neutral solution of, ii, 877.
Dumas' method of determining vapour-densities a modification of, ii, 697.
Durangite, i, 286.
—— occurrence of, in the tin-ore district of Durango, Mexico, ii, 719.
Durene, preparation of, from paradibromobenzene, ii, 751.
Dyed stuffs, sodium hyposulphite

(SO_2Na_2) as a reagent in the analysis of the colouring matters of, ii, 349.
Dyeing, application of nitroalizarin to steam, ii, 950.
Dye-stuff, use of quebracho as a, ii, 951.

E.

Earth-metals, compounds of mercuric cyanide with the chlorides of, ii, 423.
—— preparation of, i, 689.
—— quantivalence of the rare, i, 49.
Earths, alkaline, and alkalis, volumetric analysis of a mixture of the sulphates of the, ii, 353.
Eggertz's colorimetric method, calculation of the percentage of chemically combined carbon in analyses of steel by, i, 742.
Elæomargaric acid, modifications of, produced by light and heat, i, 454.
Elasticity of metals at different temperatures, ii, 700.
Elasticity of torsion, i, 39.
Electric behaviour of metals dipped in water or saline solutions, effect of sunlight on, ii, 818.
Electric conducting power of water, i, 429.
Electric conductivity of acids in aqueous solution, ii, 104.
Electric conductivity of selenium, dependence of, on heat and light, i, 677.
Electric current, case of work produced by the, i, 160.
Electric light, effect produced by the admixture of foreign substances with charcoal in the production of carbon points for the, ii, 104.
Electric light, manufacture of carbon points for the, ii, 270.
Electric resistance of liquids at high pressures, ii, 161.
Electric tensions, fixation of nitrogen on organic substances under the influence of feeble, ii, 862.
Electricity, absorption of free nitrogen by the proximate principles of vegetables under the influence of atmospheric, i, 222.
Electro-capillary phenomena, ii, 820.
Electro-chemical actions and electro-metallurgy, ii, 269.
Electro-chemical deposition of aluminium, magnesium, cadmium, bismuth, antimony, and palladium, i, 161.
Electro-deposition of cobalt, ii, 375.
Electro-deposition, use of palladium instead of silver in, ii, 239.
Electrodes, polarisation of, in water free from air, i, 266.
Electrolysis, estimation of metals by, i, 340.
—— estimation of zinc and lead in minerals by, ii, 804.
—— with evolution of hydrogen at both poles, i, 678.
Electrolyte, effect of heat upon a voltaic circuit completed by an, i, 429.
Electrolytic gases, penetration of platinum by, ii, 161, 271.
Electro-metallurgy and electro-chemical actions, ii, 269.
Electro-silicic light, ii, 270.
Elm-bark, chemistry of, i, 720.
Emeralds and beryls, analysis of, ii, 574.
Emetine, preparation and composition of, ii, 628.
—— a reaction of, ii, 933.
Emodin, i, 610.
—— from the bark of *Rhamnus frangula*, i, 477.
Enstatite crystals from Kjörestad, near Bamle, Norway, ii, 718.
Enysite, a new mineral, ii, 282.
Eosin, i, 200.
Epichlorhydrin, i, 291.
Ergot, sclerotic acid, the active principle of, ii, 628.
Eriodendron anfructuosum (kapok-tree), composition and nutritive value of cake made from the seed of, i, 105.
Erythrin, i, 202.
Eterpene (ethyl-terpene), ii, 789.
Ethane, chlorodiethoxyl-, preparation of, i, 291.
Ethane, nitro-, action of various bodies on, i, 297.
Ethene bromide, action of silver oxalates on, ii, 422.
Ethene glycol, preparation of, by Hüfner and Zeller's method, ii, 875.
Ethene hydrobromide, tribrom-, conversion of ordinary pyrotartaric acid into, ii, 443.
Ethene oxide, polymeride of, i, 291.
Ethenyltricarbonic acid, ii, 883.
Ether, decomposition of silver dibromacetate when heated with dry, ii, 93.
—— freezing point of, ii, 425.
—— solubility of alkalis in, ii, 706.
—— solubility of, in aqueous hydrochloric acid, ii, 178.
Ether and chloroform, determination of alcohol in, ii, 930.
Etherification, a contribution to our knowledge of, ii, 418.
—— experiments on, ii, 865.
Ethers, formation of, ii, 725.

Ethers, doctrine of limits in the formation of, ii, 418.
—— direct conversion of nitrils into compound, ii, 874.
—— preliminary report on the, i, 183.
Ethers of benzyl, action of nitrils on the haloïd, i, 466.
Ethers of hydroxamic acids, ethylhydroxylamine, and methylhydroxylamine, i, 188.
Ethidene-dibenzamide, i, 314.
Ethoxyisobutyric acid, ii, 313.
Ethoxyl-compounds of phosphorus, action of, on phosphorus chlorides and on phosphorous acid, i, 292.
Ethyl acetoacetate, halogen derivatives of, ii, 435.
Ethyl alcohol, action of sulphuryl chloride on, ii, 288.
—— —— behaviour of ethyl chlorosulphate to, ii, 289.
Ethyl alcohol and methyl chlorosulphate, ii, 290.
Ethyl benzenesulphonate, i, 463.
Ethyl bromide, dibrom-, action of silver cyanide on, ii, 869.
Ethyl chlorosulphate, action of water on, ii, 289.
—— —— behaviour of, to ethyl alcohol, ii, 290.
Ethyl chlorosulphate and methyl alcohol, ii, 290.
Ethyl dithio-ethenecarbonate, ii, 317.
Ethyl dithioethenedisulphocarbonate, ii, 317.
Ethyl dithioethenetetrasulphocarbonate, ii, 318.
Ethyl formate, action of a mixture of ethyl and allyl iodides on, in presence of zinc, ii, 298.
Ethyl hydride, preparation of, by the copper-zinc couple, i, 566.
Ethyl isosuccinate, decomposition of, by heat, ii, 442.
Ethyl mercaptan, ii, 294.
Ethyl, mercaptides and certain sulphides of, i, 585.
Ethyl nitrate, preparation of, i, 449.
Ethyl oxalate, action of allyl iodide and zinc on, i, 60, 455.
Ethyl polysulphides, ii, 296.
Ethyl propionylpropionate, ii, 439.
Ethyl santonate, i, 90.
Ethyl, selenium compounds of, i, 290.
Ethyl succinate, action of alkali-metals on, ii, 319.
Ethyl sulphides, i, 585.
Ethyl tetrasulphide, ii, 296.
Ethyl thio-disulpho-dicarbonate, ii, 314.
Ethyl and allyl iodides, action of a mixture of, on ethyl formate in presence of zinc, ii, 298.
Ethylamine derivatives, tri-, ii, 877.
Ethylate of chloral, ii, 878.
Ethylate of sodium, action of bromine on, i, 290.
—— —— action of, on trichloracetic acid, i, 290.
Ethylbenzylammonium, iodide of tri-, ii, 606.
Ethyl-butyl sulphate, ii, 290.
Ethyl-compounds of salicylic acid, i, 313.
Ethylcyanamide, di-, conversion of cyanamide into, ii, 307.
Ethylene. See Ethene.
Ethylhydroxylamine, ethers of, i, 188.
Ethylmethyl ketone, pinacone and pinacolin from, ii, 427.
Ethylmethyloxamide and ethyl- and methyl-oxamethane, ii, 187.
Ethylmethylsulphone, i, 189.
Ethyloxamethane, ii, 187.
Ethyl- and methyl-oxamethane and methylethyl oxamide, i, 185.
Ethylquinidine sulphatoperiodide, i, 713.
Ethylsulphinic acid, ii, 296, 734.
Ethylsulphuric chloride and sulphuryl chloride, action of, on aniline, ii, 447.
Ethylterpene, ii, 626, 789.
Ethyltheobromine, i, 93.
Ethylvinyl, derivatives of, ii, 867.
—— preparation of the glycolbutylenic derivative of, ii, 868.
Eugenol, acet-, ii, 339.
Eugenol, amyl-, i, 462.
Eugenol, benzyl-, i, 462.
Eugenol, butyl-, i, 462.
Eugenol, ethylene-, i, 462.
Eugenol, hexyl-, i, 462.
Eugenol, isopropyl-, i, 461.
Eugenol, propyl-, i, 461.
Eugenol and anethol, constitution of the radicle C_3H_5 in, ii, 479.
Eugenols, researches on the substituted, i, 460; ii, 478.
Euphorbia amygdaloïdes and *Herniaria glabra*, ash of, i, 487.
Euxenite, i, 715.
Excrements of poultry, ii, 792.
Explosions, spontaneous, application of the principle of dissimilar molecules to, i, 435.
Explosive mixture of hydrogen and oxygen in closed vessels, heat of combustion of the, ii, 690.
Extracts, new process for the preparation of, without heat, ii, 949.

F.

Fagus sylvatica, analysis of, 210.
Fat in milk and in milk products, error in the estimation of, ii, 941.
Fat, situation of the deposit of, in animals on different diets, ii, 791.
Fat-forming equivalent of albuminoïds, ii, 347.
Fats, determination of the specific gravities of, at high temperatures, ii, 108.
—— some peculiar modifications of animal, the result of fermentation and digestion of the neutral fats of food prior to and during assimilation, ii, 207.
—— various, examination of, ii, 518.
Fatty acids, haloïd-substitution-products of the, ii, 582.
—— —— manipulation of, ii, 930.
—— —— aromatised, new method of synthesis of, i, 590.
—— —— oxidation of, ii, 582.
Fatty series, action of alkaline thiocyanates upon the hydrochlorides of the alkaloïds of the, ii, 309.
Feathers and hair, black colouring matter contained in, i, 427.
Felspars, analysis and determination of the fusibility of three Bavarian, i, 446.
Fergusonite, ii, 715.
Ferment in saliva, peptone-forming, ii, 347.
Ferment, supposed action of hops as a, ii, 352.
Fermentation, products of, in the refuse of Paris, ii, 915.
Fermentation, alcoholic, i, 226.
Fermentation and digestion of the neutral fats of food prior to and during assimilation, some peculiar modifications of animal fats, the result of, ii, 201.
Fermentation of fruits, action of antiseptic and toxic vapours on the, ii, 507, 508.
—— —— plunged into carbonic anhydride, i, 106.
Fermentation of glycerin, i, 226.
Fermentation-processes, relation of sodium chloride to certain animal, i, 101.
Fermentation of urine, i, 222.
Ferments, diastatic, ii, 351.
—— organised, nitrification by, ii, 215.
—— organised, experiments showing that the poisonous properties of putrefied blood arise from, ii, 506.
—— pancreatic, decomposition of gelatin and albumin by, in absence of air, ii, 630.
Ferments contained in plants, study of the, i, 488.
Ferments, saccharifying, contribution to the knowledge of, ii, 305.
Ferric oxide, precipitation of phosphoric acid by ammonia in presence of, i, 578.
Ferric oxide and alumina, separation of vanadic acid from, ii, 175.
Ferric and cupric oxides, method of preparing, from the sulphates, so as not to obtain basic sulphates, i, 283.
Ferric phosphate, composition of, ii, 844.
Ferricyanide of bismuth, i, 653; ii, 40.
Ferricyanide of cadmium and ammonium, ii, 869.
Ferricyanide of lead and potassium, ii, 869.
Ferricyanides, two new, and a thiocyanoplatinate of potassium, ii, 869.
Ferrocyanide of bismuth, i, 655.
—— —— action of chlorine on, ii, 44.
—— —— action of nitric acid on, ii, 41.
Ferrocyanides, researches on the, i, 188.
—— Wyrouboff's, i, 298.
Ferromanganese ores, quantitative separation of iron and manganese in, ii, 805.
Ferromanganese and spiegeleisen, determination of manganese in, ii, 647.
Ferrosopyrogallic reagent, application of, to the estimation of bicarbonates in waters, i, 340.
Ferrous mercaptide, ii, 295.
Ferrous oxide, new method of estimating, in silicates which are insoluble in the ordinary mineral acids, ii, 640.
Fertilising power of lavas, &c., ii, 861.
Fever, contribution to the theory of, i, 328.
Fibrin, coagulation of, i, 726.
—— experiments on the coagulation of, i, 483.
Fibrinogen, preparation of pure, i, 727.
Filix max, analyses of roots of, i, 336.
Filtering, simple suction arrangement for rapid, ii, 508.
Filtering solutions, employment of compressed air in, i, 270.
Filter-paper, comparative analysis of, ii, 217.
Fining, influence of, on the weight of the dry extract of wine, i, 750.
Fire-clay, quantitative analysis of, ii, 356.
Fire-damp, limits between which it can explode, i, 166.

Fires, preparation of some coloured, used in pyrotechny, i, 235.
Flames charged with saline dust, character of, ii, 817.
—— coloured, photometric researches on, ii, 817.
—— spectra of metals at the base of, ii, 105.
—— theory of luminous, i, 43, 265; ii, 106.
Flooring slabs, i, 760.
Flour, detection of alum in, i, 231; ii, 510.
—— detection of foreign mineral substances in, i, 753.
Flowers, saccharine matter contained in the petals of, i, 452.
Fluid-cavities, observations of, i, 241.
Fluorene and pyrogenic hydrocarbons, i, 70.
Fluorenic alcohol, ii, 493.
Fluorescein and its derivatives, i, 195.
Fluorescein as an indicator in titration, i, 341.
Fluorescence, i, 676.
Fluorescent body in *Atropa belladonna*, i, 213.
Fluorides, some new, ii, 839.
Fluorspar, etched figures on, ii, 116.
—— fluid contained in a cavity in, ii, 144.
—— pseudomorph of, after prosopite, i, 700.
Flux, uselessness of Turner's, ii, 216.
Fly agaric, investigations on the alkaloïds of the, ii, 197.
Fodder, researches on the formation of hippuric acid in the organisms of herbivorous animals supplied with different kinds of, i, 217.
Fœtus, respiration of the mammalian, ii, 502.
Food, copper in, ii, 511.
—— investigations on, ii, 517.
—— some peculiar modifications of animal fats, the result of fermentation and digestion of the neutral fats of, prior to and during assimilation, ii, 207.
Foods, assimilation of different sorts and mixtures of, by pigs, i, 98.
Formamide, phenylthio-, ii, 604.
Formanilide, thio-, ii, 604.
Formate, ethylic, action of a mixture of ethyl and methyl iodides on, in presence of zinc, ii, 298.
Formate of potassium, decomposition of, in carbonic acid, air, and pure hydrogen, i, 66.
Formic acid, acetic acid, &c., in urine, ii, 504.
Formic acid, electrolysis of aqueous solutions of, ii, 311.
—— —— reaction of, with orthamidophenyl, ii, 752.
—— —— reaction of, with tolylenediamine, ii, 752.
Formic ethers, orthothio-, ii, 311.
Formorthotoluide, ii, 754.
Fossil meal, preparation of soluble glass from, i, 757.
Franklandite and ulexite, relative composition of, ii, 174.
Franklinite, relation of, to the spinel group, i, 701.
Fruit of the bladder senna, gases in the, i, 105.
Fruits, action of antiseptic and toxic vapours on the fermentation of, ii, 507–8.
Fruits, gases in the tissues of, ii, 913.
Fruits, dried, analyses of, ii, 797.
Fruits plunged into carbonic anhydride, fermentation of, i, 106.
Fuchsine, action of, introduced into the stomach and the blood, i, 487.
—— detection of rosolic acid in presence of, i, 747.
—— detection of, in wines, i, 234, 750; ii, 936.
—— wines coloured by, ii, 521.
Fuchsine and other colouring matters, detection of, i, 749.
Fuchsine and rosaniline, i, 322.
Füh-ling (*Lycoperdon solidum*), from China, chemical examination of, i, 337.
Fumaric acid, behaviour of, with fuming hydrobromic acid, ii, 738.
—— —— relation of, to maleic acid, ii, 430.
Fungi, occurrence of oxalic acid in, ii, 796.
Fungin, i, 229.
Furfuracrylic acid, ii, 444.
Furfurangelic acid, ii, 746.
Furfurobutylene, ii, 746.
Furfurol, ii, 444, 743.
—— reaction of urea with, ii, 742.
Furfurol-group, constitution of the, ii, 743, 745.
Furfuropropionic acid, ii, 445.

G.

Galactose and lactoglucose obtained by the action of dilute sulphuric acid on lactose, ii, 877.
Galena from Engelskirchen, ii, 855.
Gallic and benzoic acids, action of sul-

phuric acid upon a mixture of, ii, 894.
Gallium, crystals of, i, 442.
—— new process for the extraction of, i, 48.
—— physical properties of, i, 48.
—— reactions of, i, 167.
Galvanic circuit, division of the positive metal in the, between two acids, i, 677.
Galvanic current, change in the direction of the polarisation current of, after the passage of an oppositely directed current, ii, 819.
Gardenin, note on, i, 551.
Gas, absorption and emission of, by the roots of plants, ii, 350.
—— destruction of leather by, ii, 949.
—— exchanges of, between plants and the atmosphere, ii, 350.
—— ratio of the two specific heats of a, i, 162.
Gas analysis, some points in, ii, 28.
Gas apparatus for quantitative blowpipe analysis, ii, 215.
Gas, illuminating, analysis of, i, 743.
Gas and petroleum, cost of lighting and heating by, ii, 949.
Gaseous state, heat disengaged by combination in the, ii, 825.
Gases, absorption of, by saline solutions, ii, 833.
—— coefficient of expansion of, i, 31.
—— compressibility of, at temperatures less than one atmosphere, i, 164.
—— compression of, by low pressures, i, 32.
—— dissolved in water, estimation of, ii, 806.
—— evolved in Leblanc's soda process, composition of, i, 236.
—— evolved from ultramarine furnaces, temperature and composition of, i, 111.
—— exchange of, between plants and the atmosphere, functions of the leaf and stomates in promoting, ii, 634.
—— in the fruit of the bladder senna, i, 105.
—— glass impervious to, ii, 165.
—— of the Grotta del Cane, analysis of the, i, 448.
—— issuing from metallurgical hearths, utilisation of, ii, 949.
—— mechanical actions of incandescent, ii, 161.
—— in meteorites, i, 702.
—— migration of, i, 32.
—— penetration of platinum by electrolytic, ii, 161, 271.
Gases produced by the explosion of dynamite, experiments on the action of, in their relation to meteorites, and the circumstances attending the arrival of these bodies in our atmosphere, ii, 835.
Gases, researches on the solution of, in iron, steel, and manganese, i, 51.
—— specific weights of:—lecture experiment, i, 431.
—— in the tissues of fruits, ii, 913.
Gas-liquor, contamination of well-water by, ii, 920.
—— —— use of the ammonia-soda process in working up, ii, 236.
Gasometer, laboratory, ii, 275.
Gastaldite (a new mineral), ii, 119.
Gastric juice, acidity of human, ii, 631.
—— —— digestion of linseed mucilage with artificial, ii, 911.
—— —— free acids of the, ii, 910.
Gas-wells in Pennsylvania, i, 287.
Gas-works, analysis and valuation of spent iron oxides from, ii, 927.
Gaultheria oil, testing of, ii, 227.
Gelatin considered as a reducing agent, i, 325.
Gelatin and albumin, decomposition of, by pancreas ferments in absence of air, ii, 630.
Gelsemium sempervirens, i, 97; ii, 344.
Gentian root, presence of tannin in, ii, 351, 897.
Geognosy, fundamental scientific principles of, ii, 214.
Gilding and plating solutions, analysis of, ii, 224.
Ginger, note on, i, 553.
Ginilsite and ærinite, ii, 412.
Glass, decomposition of, ii, 165.
—— decomposition of, by boiling water i, 270.
—— impervious to gases, ii, 165.
—— irisation of, i, 687.
—— manufacture of alabaster-, milk-, bone-, cryolite-, and opal-, ii, 946.
—— made with phosphate of lime, ii, 842.
Glass and crystal, composition of ancient, i, 234.
Glauber's-salt, decomposition of ammoniacal distillation-products by, ii, 237.
Glaucodote, ii, 855.
Glauconite, pseudomorph of, after augite, i, 696.
Glaucophane of Zermatt, ii, 171.
Glaucophane and glaucophane-bearing rocks of the Island of Syra, ii, 171.
Glucinum, its atomic weight and specific heat, i, 579.
Glucose, change of glycerin into, ii, 876.
—— a new reagent for the detection and estimation of, i, 345.
—— specific rotatory power of, i, 265.

Glucose, transformation of the crystallisable portion of brown sugar into inactive, ii, 303.
Glucoside, a new, in the flowers of *Cichorium intybus*, i, 477.
Glue, manufacture of, i, 122.
Glutamic acid from the juice of vetch-germs, ii, 739.
Glutamic acid, occurrence of an amide of, in the young plants of the pumpkin, ii, 324.
Glutamic acid and its isomerides, i, 63.
Glycererretin, i, 96.
Glyceric acid, dry distillation of, ii, 443.
—— —— preparation of, ii, 311.
Glycerides, metallic, ii, 302.
Glycerin, action of aluminic iodide on, ii, 300.
—— alleged power of, to replace sugar, i, 220.
—— new applications of, in the laboratory, ii, 244.
—— change of, into glucose, ii, 876.
—— derivatives of, ii, 301.
—— detection of, in wine, ii, 939.
—— fermentation of, i, 226.
—— retarding action of, ii, 730.
—— schizomycetic fermentation of, ii, 214.
Glycerin, cellulose, and gum, studies on, ii, 876.
Glycerin-copper solution, solubility of silk in an alkaline, ii, 379.
Glycocine, action of, on cholic acid, i, 481.
Glycogen, dissemination of, in the animal organism, ii, 204.
—— formation of, in the bodies of animals, ii, 204.
—— formation of, in the liver, i, 728.
—— influence which the tying of the *Ductus choledochus* exerts upon the amount of, in the liver, i, 221.
—— origin and accumulation of, in the animal organism, i, 484.
—— product of the oxidation of, with bromine, silver oxide, and water, i, 64.
—— transformation of, into grape-sugar by saliva and pancreatic ferment, ii, 910.
Glycol, action of electrolytic oxygen on, ii, 300.
—— preparation of, i, 293.
—— preparation of, by Hüfner and Zeller's method, ii, 875.
Glycolbutylenic derivative of ethylvinyl, preparation of the, ii, 869.
Glycollic acid, easy method of preparing, i, 59, 454.
Glycollic acid, cholo-, i, 481.
Glycollic acid, diphenylene-, ii, 336.
Glycollic acid, thio-, ii, 595.
Glycols, action of water on, i, 58.
Glycosamine hydrochloride, i, 64.
Glycyrrhizin, ii, 500.
Glyoxaline, i, 299.
Glyoxalyl-urea, decomposition of, ii, 599.
Glyoxylic acid, ii, 878.
—— —— action of hydrocyanic and hydrochloric acid on, ii, 587.
—— —— action of hydrogen sulphide on, ii, 588.
—— —— constitution of, ii, 102.
—— —— contributions to the history of, ii, 587.
—— —— preparation of, ii, 96.
—— —— reaction of, with ammonia, ii, 99.
Glyoxylic and dibromacetic acids, ii, 90.
Glyoxylic diureide, identity of, with allantoïn, ii, 741.
Gmelinite from Nova Scotia, ii, 719.
Goethite from Adair Co., Missouri, ii, 713.
Gold, association of, with scheelite, in Idaho, U.S., ii, 713.
—— Nobili's rings on, i, 677.
—— from Vöröspatak, ii, 279.
Gold bath, new, ii, 235.
Graminaceæ, absence of leucine, in the products of germination of the, i, 105.
Granite-block and aluminous slate of Barr-Andlau, chemical examination of the contact-zones of the, ii, 413.
Grapes, experiments to demonstrate the conversion of sugar when added to fermenting must and marc of, i, 358.
—— experiments to determine the loss of sugar in fermenting the must and marc of, i, 236.
Grape-sugar, ii, 303.
—— —— crystallised, ii, 730.
—— —— detection of wines sophisticated with, ii, 939.
—— —— occurrence of, in alcohol, i, 705.
—— —— preparation of chemically pure, i, 705.
—— —— transformation of glycogen into, by saliva and pancreatic ferment, ii, 911.
Graphite of Mugrau, Bohemia, some minerals accompanying the, i, 581; ii, 859.
Graphite and platinum, certain chemical effects of oxygenised, ii, 710.
Grasses, silica in, i, 336.
Greenstone, occurrence of scorodite, pharmacosiderite, and olivenite in, ii, 283.
Ground pea (*Arachis hypogæa*), analysis of the ash of, i, 225.

Guanamine and cyanuric acid, constitution of, i, 299.
β-Guanidopropionic acid, ii, 311.
Guanine (amidosarcine) constitution of, ii, 741.
Guanine in pig's urine, i, 330.
Guanos, phosphatic, i, 733.
Guaraná, extraction of caffeine from, ii, 627.
Guarana, tannic acid of, ii, 897.
Gum, glycerin and cellulose, studies on, ii, 876.
Gun-cotton, composition of, i, 453; ii, 304.
Gun-cottons, &c., chemical composition of various, i, 228.
Gypsum, crystal-tectonic of, i, 582.
Gypsum crystals from Sütel, i, 582.
Gypsum, solubility of, in water and in saline solutions, ii, 112.

H.

Hæmatin, action of iodine on, i, 347.
—— action of sodic hyposulphite on, ii, 346.
—— researches on, i, 326.
Hæmoglobin, spectroscopic estimation of the amount of, in human blood, ii, 808.
Hæmoglobin and its derivatives, some reactions of, i, 753.
Hæmoglobin, carbonyl-, conversion of, into oxy-, ii, 346.
Hair and feathers, black colouring matter contained in, i, 427.
Halogen-derivatives of anthracene, ii, 493.
—— —— of ethyl acetoacetate, ii, 435.
Halogens, method of estimating, in organic compounds, ii, 225.
Haloïd-compounds of the alcohol radicles, action of water on the, ii, 422.
—— —— reduction of organic, by zinc and zinc-dust, ii, 728.
Haloïd-derivatives of the nitrotoluenes, i, 207.
Haloïd ethers of benzyl, action of nitrils on, i, 466.
Haloïd salts, oxidation of, and of sulphurous and arsenious acids, ii, 841.
Haloïds, action of alkaline, upon ultramarine, ii, 707.
Hatchettolite, ii, 577.
Heat, application of the mechanical theory of, to the study of volatile liquids, i, 162.
—— attraction and repulsion of bubbles by, ii, 271.
—— of combustion of the explosive mixture of hydrogen and oxygen in closed vessels, ii, 690.
Heat, curious method of producing, ii, 274.
—— disengaged by combination in the gaseous state: anhydrous acids and water, ii, 825.
—— disengaged by the union of sulphuric acid and water, ii, 824.
—— effect of, upon a voltaic circuit completed by an electrolyte, i, 429.
—— of formation of chloric acid, ii, 696.
—— quantity of, absorbed by certain substances, i, 432.
—— relation between the absorbing powers of bodies for, and their chemical equivalents, i, 430.
—— pretended relation between the mechanical equivalent of, and the molecular weights of bodies, i, 164.
—— of solution of chlorine, bromine, and iodine compounds, i, 693.
Heat, radiant, and light, influence of, on the transpiration of plants, ii, 349.
Heat, specific, of mercury, i, 678.
Heavy spar, new locality of, i, 702.
Hemipinic acid, iso-, ii, 487.
Hemipinic, opianic, and quercimeric acids, isomerides of, ii, 487.
Henwoodite, a new mineral, ii, 282.
Heptane, normal, ii, 866.
Heptyl acetate, ii, 126.
Heptyl alcohol, ii, 124.
—— —— normal primary, and some of its derivatives, ii, 123.
Heptyl bromide, ii, 126.
Heptyl chloride, ii, 125.
Heptyl iodide, ii, 126.
Heptyl œnanthylate, ii, 127.
Heptyl-ethyl ether, ii, 127.
Heptylic acid, oxy-; identity of Helm's with Ley's acid, ii, 882.
Heracleum sphondylium, essential oil of the fruit of, ii, 425.
Herapathite and similar acid periodides, i, 210, 713; ii, 571.
Herbivora, pancreatic juice of, ii, 204.
Herniaria glabra, ash of, i, 487.
Hesperidine, nitroso-, i, 558.
Heubachite, a natural hydrated oxide of cobalt and nickel, ii, 855.
Hexagonite, Goldsmith's, a variety of tremolite, ii, 720.
Hexane, brominated derivatives of, ii, 867.
Hexane, normal, ii, 866.
Hexbromacetone, formation of, from bromodichromazin, ii, 780.
Hexhydronaphthalene, ii, 899.
Hexyl alcohol, normal, ii, 879.
Hexyl chloral, ii, 586.

Hippuric acid and its derivatives, ii, 484.
—— —— researches on the formation of, in the organism of herbivorous animals supplied with different kinds of fodder, i, 217.
Homologous series, vapour-tensions of, ii, 822.
Homologues and isomerides, physical properties of, ii, 836.
α-Homoprotocatechuic acid, ii, 340.
α-Homovanillic acid, acet-, ii, 339.
α-Homovanillic acid and its derivatives, ii, 339.
Honey-dew, ii, 210.
Hops, properties of, as a ferment, i, 240.
—— supposed action of, as a ferment, ii, 352.
Horn and cray-fish shells, composition of, i, 728.
Hornblende-gabbro, from Minnesota, ii, 720.
Hornblende-granite or syenite-granite from Sauk Rapids and St. Cloud, Minnesota, ii, 723.
Hornstone, pseudomorph of, after calcite, i, 693.
Huber's reagent, ii, 352.
Human body, detection of zinc and copper in, ii, 928.
Human corpse, natural poison of the, i, 331.
Humite, lievrite, and chondrodite, isomorphism and chemical constitution of, ii, 117.
Hydantoïn, thio-, ii, 599.
Hydrates of bismuth, i, 647.
Hydrates, dehydration of, by the time method, ii, 395.
—— examination of crystalline, by the time method, ii, 381.
Hydrazine and its compounds, ii, 457.
Hydrazine-compounds, aromatic, i, 619; ii, 887.
Hydric sulphide, new method of manipulating, ii, 701.
Hydriodic acid, action of, on naphthalene, i, 466.
—— —— dissociation of gaseous, in presence of an excess of one of its elements, ii, 828.
—— —— preparation of, ii, 109.
Hydrobenzamide, amarine and lophine, ii, 887.
Hydrobenzoïn and isohydrobenzoïn, action of dilute sulphuric acid on, i, 460.
Hydrobenzoïn-group, compounds of the, ii, 622.
Hydrobromocumenylacrylic acid, ii, 661.
Hydrobromocumenylcrotonic acid, ii, 662.
Hydrocarbon, new, obtained from the highest-boiling portions of American petroleum, ii, 867.
Hydrocarbons, action at a high temperature of volatile metallic chlorides on, ii, 551.
—— dissociation of, by means of palladium-wire, and on the similarity of these phenomena to those of catalysis, ii, 830.
—— a new general synthetical method of producing, ii, 725.
Hydrocarbons, aromatic, new method of brominating, in presence of aluminium bromide, ii, 599.
Hydrocarbons of the benzene series, formation of, by dry distillation, ii, 444.
Hydrocarbons derived from a double molecule of toluene by elimination of hydrogen, action of heat on, i, 74.
Hydrocarbons obtained from the homologues of cinnamic acid, ii, 660.
Hydrocarbons of the paraffin series found in a lava from Etna, i, 704.
Hydrocarbons, pyrogenic, i, 70.
Hydrocarbons, ketones, &c., new general method for the synthesis of, ii, 864.
Hydrochloric acid, action of dry gaseous, on sulphates at various temperatures, i, 439.
—— —— action of, on metallic sulphates, ii, 840.
—— —— action of, on potassium chlorate, i, 47.
—— —— solubility of ether in aqueous, ii, 178.
—— —— use of, in the diffusion-process, i, 118.
Hydrochrysammide, i, 611.
Hydrocotarnine hydrobromide, action of bromine on, ii, 527.
—— —— preparation of, ii, 529.
Hydrocotarnine, narcotine, and cotarnine. Part V. New cotarnine derivatives and nor-opianic acid, ii, 525.
Hydrocyanic acid, action of, upon diacetonamine chloride, ii, 878.
—— —— action of, on pyruvic acid, i, 455.
—— —— estimation of, in the dead body, ii, 365.
Hydrocyanic acid, spontaneous alteration of anhydrous, and a new case of the complete transformation of that acid, i, 66.
Hydrogen, action of nascent, on thiobenzamide, ii, 887.
—— behaviour of α-dichloropropionic acid to nascent, ii, 181.
—— decomposition of potassium cya-

nide, zinc cyanide, and potassium formate in, i, 66.
Hydrogen, diamagnetism of condensed, ii, 820.
—— electrolysis with evolution of, at both poles, i, 678.
—— evolution of antimony from stibnite by nascent, i, 174.
—— purification of, for analytical purposes, i, 271.
—— reduction of silver nitrate by, i, 282.
—— replacement of bromine and sulphonyl by, in the benzenesulphonic acids, ii, 191.
Hydrogen and oxygen, heat of combustion of the explosive mixture of, in closed vessels, ii, 690.
Hydrogen chloride, action of dry, on sulphates, ii, 110.
Hydrogen chloroplatinite, ii, 276.
Hydrogen dioxide, energy due to the formation of, i, 10.
Hydrogen dioxide and alcohol, &c., i, 24.
Hydrogen dioxide and chlorine, bromine and iodine, i, 22.
Hydrogen dioxide and metallic oxides, i, 6.
Hydrogen dioxide and metals, i, 1.
Hydrogen dioxide and certain peroxides, study of, i, 1, 125.
Hydrogen dioxide and sulphides, i, 23.
Hydrogenisation of benzene and its homologues, ii, 445.
Hydromethylparoxyphenylacrylic acid, i, 411.
Hydronaphthalenes, hex- and octo-, ii, 899.
Hydroquinone, preparation of, i, 78.
Hydrotitanite, a new mineral, ii, 173.
Hydroxamates, double salts of, i, 69.
Hydroxamic acids, ethers of, i, 188.
Hydroxylamine, action of alkaline copper solution on, ii, 406.
—— thermic formation of, i, 46.
—— reaction of, with thiocarbanilide, i, 314.
Hydroxylamine, anisbenzanis-, ii, 33.
Hydroxylamine, dianisbenz-, ii, 331.
Hydroxylamine and its amidated derivatives, structural formulæ of, ii, 328.
Hydroxylurea, salts of, and double salts of other hydroxamates, i, 69.
Hyoscamus niger, chemico-legal examination of, ii, 934.
Hypobismuthic hydrate, preparation of, i, 29.
Hypobromite of soda, determination of urea by means of, i, 534, 538.
Hypochlorites, sodic and calcic, action of, on urea, ii, 226.
Hypophosphoric acid, ii, 702.
Hypophosphorous acid, ii, 275.
Hypophosphorous and phosphorous acids, constitution of, i, 276.
Hyposulphite of sodium (SO_2Na_2) as a reagent in the analysis of the colouring-matters of dyed stuffs, i, 349.
—— —— action of, on the hæmatin of blood, ii, 346.
Hypoxanthine (sarcine), constitution of, ii, 741.

I.

Idocrase, near Drammen, ii, 119.
Ihleite, a new mineral, ii, 859.
Illumination, contamination of air arising from artificial, and on the distribution of carbonic anhydride in close rooms, ii, 810.
India-rubber, injurious character of some articles made with, i, 240.
Indicator, a new, for titrating alkalis and acids, ii, 640.
Indigo, detection of, in wine, ii, 937.
—— determination of nitric acid by, i, 735.
Indigo-blue, synthesis of, i, 321.
Indigotin, new derivative of, ii, 898.
Indium, action of, on nitric acid, ii, 84.
Indol, preparation of, i, 321.
—— properties of, i, 322.
—— synthesis of, ii, 898.
Inks from logwood, i, 123.
Inorganic acids, complex, ii, 847.
Inorganic constituents, can they be withdrawn from the bones by the introduction of lactic acid into the intestines? i, 216.
Instruments, construction of scientific, of rock crystal, i, 682.
Iodates, action of phosphorus on, in presence of atmospheric oxygen, i, 578.
—— phosphorus as a test for, i, 344.
Iodates and iodides, new reaction of, i, 491.
Iodic acid, preparation of, i, 271.
—— —— thermic phenomena of, ii, 274.
Iodides, acid per-, resembling herapathite, i, 713.
Iodides, acid per-, of quinine and methyl-quinine, i, 210.
Iodides and iodates, new reaction of, i, 491.
Iodides of potassium and sodium and

potassium bromide, preparation of, i, 277.
Iodine, action of, on carminic acid and on hæmatin, i, 347.
—— action of water on the chlorides of, ii, 110.
—— influence of water on the action of chlorine on, ii, 275.
Iodine chloride, action of aromatic substances on excess of, i, 706.
Iodine compounds, heat of solution of, ii, 693.
Iodine trichloride, ii, 163.
—— —— specific gravity of, ii, 697.
Iodine and alcohol, action of, on the platinonitrites, ii, 710.
Iodine, bromine, chlorine, sulphur, phosphorus, and arsenic, new method for the gravimetric and volumetric determination of, in organic substances and in vegetable and animal compounds, i, 739.
Iodine and hydrogen dioxide, i, 22.
Iodine and starch reaction, i, 107.
Iodo-compounds of benzene, i, 307.
Iodoform, bromoform, &c., new formation of, ii, 423.
β-Iodopropionic acid, preparation of, ii, 312.
Iron, action of acids on, i, 175.
—— action of, on nitric acid, ii, 79.
—— analysis of, ii, 224.
—— burnishing of, 113.
Iron, cast, presence of copper in, i, 235.
Iron, cast and wrought, detection of copper in steel and, ii, 926.
Iron, chrome-, and analogous compounds, preparation of, ii, 709.
Iron containing phosphorus, manufacture of rails from, ii, 240.
Iron, crystals of magnetic oxide of, formed by roasting a spathic mineral, i, 446.
Iron, cyanogen compounds of, ii, 597.
Iron deposit, composition of an, i, 355.
Iron-developers, i, 756; ii, 235.
Iron, estimation of, by stannous chloride, ii, 223.
Iron, metals accompanying, ii, 523.
Iron, some methods for the estimation of sulphur in, ii, 799.
Iron, Neuntmannsdorf meteoric, of the Dresden Museum, ii, 177.
Iron, the occurrence of native, in basalt, ii, 578.
Iron, oxidation of, in a gas furnace, ii, 709.
Iron, separation of manganese from, ii, 805.
Iron, separation of, from manganese, cobalt, nickel, and zinc, ii, 924.
Iron, solution of gases in, i, 51.
Iron and aluminium hydrates, dehydration of, by the time method, ii, 395.
Iron, chromium, and uranium, separation of, ii, 926.
Iron and manganese, estimation of, in manganiferous iron ores, ii, 1.
—— —— quantitative separation of, in ferromanganese ores, ii, 805.
Iron and steel, estimation of carbon in, ii, 927.
—— —— estimation of chromium and aluminium in, ii, 802.
—— —— estimation of phosphorus in, ii, 927.
—— —— nomenclature of, ii, 209.
Iron mass, the Nordenskiöld, and the occurrence of native iron in basalt, ii, 578.
Iron ores, dephosphorisation of (Jacobi's method), i, 759.
Iron ores, estimation of manganese and iron in manganiferous, ii, 1.
Iron ores, quantitative analysis of, ii, 356.
Iron ores and pig-iron, determination of phosphorus in, ii, 800.
Iron oxide and alumina, determination of, in presence of phosphoric acid, ii, 223.
—— —— precipitation of, by sodium acetate, i, 344.
—— —— separation of vanadic acid from, ii, 922.
Iron oxide and titanic acid, action of titanium dichloride, chlorine, and, hydrochloric acid upon mixtures of, i, 173.
Iron oxides, ii, 573.
—— —— analysis and valuation of spent, from gas works, ii, 927.
Iron pyrites, cupreous, method of estimating copper and sulphur in, and in the burnt ore, before and after lixiviation, ii, 650.
Iron, silicofluorides of, i, 690.
Iron-stone deposits, some minerals from the Silurian, resembling ankerite, and on the chemical constitution of the minerals classed with ankerite, i, 581.
Isoamyltrimethylammonium chloride, ii, 199.
Isobutylbenzene, preparation of, ii, 885.
Isobutylsulphinic acid, ii, 735.
Isodinaphthyl, nitro- and cyanogen-, derivatives of, ii, 558.
Isodinaphthyl sulpho-acids, ii, 556.
Isodinaphthyl sulpho-acids and salts, action at a high temperature of certain volatile metallic chlorides on, ii, 556.

Isohemipinic acid, ii, 487.
Isohydrobenzoïn and hydrobenzoïn, action of dilute sulphuric acid on, i, 460.
Isolepidene, ii, 787.
Isomerides and homologues, physical properties of, ii, 836.
Isonitrils, action of hydrogen sulphide on, ii, 604.
Isopentyl, di- or diamyl, ii, 260.
Isopentyl (or amyl) acetoacetate, ii, 435.
Isopentyl acetoacetate and acetoethylacetate, action of chlorine on, ii, 436.
Isopepsin, i, 483.
Isophenylcrotonic acid, i, 395.
Isophosphophenyl sulphide, ii, 449.
Isopianate, methylic, or methylaldehydovanillate of methyl, ii, 487.
Isopropylphenylacrylic acid, i, 396.
Isopropylallylbenzene, ii, 664.
Isopropylbutenylbenzene, ii, 665.
Isopropylcinnamene or isopropylvinylbenzene, i, 400.
Isopropylvinylbenzene, ii, 663.
Isosuccinate, ethylic, decomposition of, by heat, ii, 442.
Isoxylene, tetrahydro-, and the constitution of camphoric acid, ii, 446.
Itaconic acid, i, 591.
—— —— addition-products of, ii, 737.
—— —— a new isomeride of, called crotaconic acid, ii, 592.

J.

Jaborandi, i, 324.

K.

Kaolin of the Thuringian variegated sandstone, ii, 119.
Kapok-cake, composition and nutritive and manurial value of the, i, 105.
Ketones, behaviour of certain, to oxidising agents, ii, 425.
—— by-products in the preparation of, ii, 732.
—— formation of, ii, 732.
—— synthesis of, from dimethylaniline, ii, 333.
Ketones and acids, organic synthesis of, by means of chlorocarbonic acid, ii, 334.
Ketones, hydrocarbons, &c., new general method for the synthesis of, ii, 864.
Ketonic acids, researches on, ii, 439.
Keuper-marls, occurrence of coelestine in, and its influence upon the constituents of plants, ii, 281.
Kindling point, i, 42.
Kopp's law of constant differences of boiling points, ii, 822.
Kreosol. See Creosol.

L.

Laboratory apparatus, new, ii, 858.
Laboratory manipulations, some simple, ii, 701.
Lactic acid, can inorganic constituents be withdrawn from the bones by the introduction of, into the blood, i, 216.
Lactoglucose and galactose obtained by the action of dilute sulphuric acid on lactose, ii, 877.
Lactuca sativa, analysis of, ii, 210.
Lanarkite, crystallographical constants of, ii, 860.
Land, action of sea-water on, i, 106.
Lanthanum, specific heat and atomic weight of, i, 50.
Latent heats, atomic weights and tensions of vapours, simple relations between, i, 162.
Laumontite from Puy-de-Dôme, ii, 283.
Laurel-water, artificial, i, 241.
Lava, hydrocarbons of the paraffin series found in a, from Etna, i, 704.
Lavas, &c., analysis and fertilising power of, ii, 861.
Lead, action of, on nitric acid, ii, 84.
—— composition of commercial white, ii, 228.
—— corrosion of, by water, i, 428.
—— desilverisation of, ii, 947.
—— estimation of, with potassium bichromate, i, 227.
—— solvent action of various saline solutions on, i, 660.
Lead antimonite from Arnsberg, Westphalia, ii, 855.
Lead carbonate, action of sodium oxalate on, ii, 250.
—— —— crystallised, formed on objects found at Pompeii, ii, 843.
—— —— solubility of, in ammonium butyrate, i, 283.
Lead iodide, method of detecting the adulteration of, i, 344.

Lead oxalate, action of, on sodium carbonate, ii, 250.
Lead sulphantimonide found at Arnsberg, Westphalia, i, 56.
Lead, white, ii, 948.
—— —— coloured yellow by oil, ii, 948.
Lead sulphate and potassium iodide, mutual action of, i, 579.
Lead, manganese, nickel, and zinc, estimation of, ii, 924.
Lead and zinc, estimation of, in minerals, by electrolysis, ii, 804.
Leadhillite, chemical constitution of, ii, 413.
Leaf and stomates, functions of the, in promoting exchange of gases between plants and the atmosphere, ii, 634.
Leather, destruction of, by gas, ii, 949.
Leather dressing, use of alkaline sulphides in, ii, 243.
Leaves, absorption of water and lime salts by, ii, 350.
Leaves of certain plants, phyllic acid from, ii, 905.
Leaves, composition of, i, 334.
Leaves, non-deciduous, winter-colouring of, ii, 349.
Leaves of *Phaseolus multiflorus*, absorption of water and lime salts by, ii, 209.
Leaves, variegated, ii, 914.
Leaves and flowering branches, influence of, on the nature and quantity of the sugar contained in the flower-stem of the agave, ii, 506.
Lecanora atra, a new acid from, ii, 786.
Lecture experiments, i, 270.
Lemon, terpene from, i, 560.
Lepidene, iso-, ii, 787.
Lepidolite, Hauer's method of disintegrating, ii, 356.
—— preparation of some lithium compounds from, i, 441.
—— preparation of lithium, cæsium, and rubidium from, ii, 706.
Leucine, ii, 596.
—— absence of, in the products of germination of the Graminaceæ, i, 105.
Leucotin, ii, 201.
Levorotatory substance in normal urine, i, 731.
Levulinic acid, ii, 881.
—— —— preparation of, i, 65.
Levulose, reduction of, i, 293.
Levulose and dextrose, derivatives of, ii, 583.
—— —— determination of, by an indirect method, ii, 641.
Lievrite, composition of, as determined by Early's method, ii, 716.
Lievrite, humite, and chondrodite, isomorphism and chemical constitution of, ii, 117.
Light, effect of, on chemical actions, and especially on oxidations, ii, 818.
—— sensitiveness to, of various salts of silver, ii, 690.
Light and carbonic acid, action of, on potassium iodide, ii, 706.
Light and radiant heat, influence of, on the transpiration of plants, ii, 349.
Lignite, analysis of the ash of, i, 287.
Lignite coal and mineral resin from Bovey Heathfield, Devonshire, gases enclosed in, ii, 146.
Lignite tar, i, 96.
Lime, loss of, in the body, especially in the bones, on an insufficient supply of, ii, 792.
—— precipitation of phosphoric acid by ammonia in presence of, i, 578.
—— quick method of estimating, in presence of magnesia, and on the application of magnesia to the defecation of sugar-liquors, i, 343.
—— separation of manganese from, ii, 805.
—— use of, in the clarifying process, i, 116.
Lime salts and water, absorption of, by leaves, ii, 350.
—— —— absorption of, by the leaves of *Phaseolus multiflorus*, ii, 209.
Limes, otto of, ii, 548.
Linen cloths, rapid destruction of, i, 361.
Linseed-mucilage, digestion of, with artificial gastric juice, ii, 911.
Liquids, compressibility of, ii, 833.
—— electric resistance of, at high pressures, ii, 161.
Liquids mixed, separation of, i, 34.
Liquids, volatile, application of the mechanical theory of heat to the study of, i, 162.
Lithia-bearing variety of biotite, i, 56.
Lithium, preparation of, from lepidolite, ii, 706.
Lithium carbonate and some new compounds of lithium, preparation of, from lepidolite, i, 441.
Lithomarge, pseudomorph of, after fluorspar, i, 700.
Litmus, note on, i, 214.
Liver, form of combination of urea in the, i, 730.
—— formation of glycogen in the, i, 728.
—— influence which the tyeing of the

Ductus choledochus exerts upon the amount of glycogen in the, i, 221.
Logwood, detection of, in wine, ii, 935.
Logwood inks, i, 123.
Lophine, hydrobenzamide, and amarine, ii, 887.
Ludlamite, a new Cornish mineral, i, 580.
Lupin seeds, germination of, i, 104.

M.

Maclurin, ii, 496.
Madder colours, i, 665 ; ii, 496.
Magenta, detection of, in wine, ii, 939.
Magic lantern, use of, for chemical demonstrations, i, 683.
Magnesia, alkalimetric estimation of, ii, 355.
—— precipitation of phosphoric acid by ammonia in presence of, i, 578.
—— quick method of estimating lime in presence of, and on the application of, to the defecation of sugar-liquors, i, 343.
Magnesia and alumina, delicate spectroscopical reaction for, i, 742.
Magnesium, action of, on some organic compounds, ii, 285.
—— electro-chemical deposition of, i, 161.
Magnesium acetate, crystalline, preparation and fermentation of, ii, 588.
Magnesium fluoride, ii, 707.
Magnesium pyroarsenate, estimation of arsenic as, ii, 222.
Magnesium salts, spectroscopic reactions of, i, 676.
Magnesium and aluminium in zinc, ii, 707.
Magnesium and cadmium, action of, on nitric acid, ii, 77.
Magnetic pyrites, analysis of, ii, 853.
Maize, vegetation of, commenced in an atmosphere free from carbonic anhydride, ii, 224.
Maize bread, alkaloïd formed in mildewed, i, 323.
Malachite, pseudomorph of, after cuprite, i, 697.
Maleic acid, behaviour of, with fuming hydrobromic acid, ii, 738.
—— —— relation of fumaric acid to, ii, 430.
Maleic ether, chloro-, action of potassium cyanide on, ii, 739.
Malic acid, chromic acid as a test for, ii, 807.
Malic ureides, conversion of, into alloxanates, ii, 741.
Malt and barley, organic constituents of, i, 224.
Malt-extract, tests for, ii, 373.
Mammalian fœtus, respiration of the, ii, 502.
Manganese in ashes detected as phosphate, ii, 223.
—— estimation of, by precipitation as oxalate, ii, 804, 924.
—— estimation of, in spiegeleisen, ii, 1.
—— estimation of, in spiegeleisen and ferromanganese, ii, 647.
—— precipitation of, by hydrogen peroxide, ii, 923.
—— separation of, in the form of anhydrous sulphide, ii, 514.
—— separation of, from iron, ii, 805.
—— separation of, from lime, ii, 805.
—— solution of gases in, i, 51.
—— volumetric estimation of, ii, 924.
Manganese bronze, i, 354.
Manganese chloride, preparation of pure, from chlorine residues, ii, 169.
Manganese dioxide, action of, on ammonium nitrate, ii, 112.
Manganese ores of Bukowina, investigation of, ii, 175.
Manganese peroxide, salts formed by, i, 52.
Manganese steel, ii, 376.
Manganese sulphide, ii, 408, 708.
—— —— tendency of, to oxidise, ii, 844.
Manganese and chromium with sodium carbonate, reactions of, i, 489.
Manganese, cobalt, nickel, and zinc, separation of iron from, ii, 924.
Manganese and iron, estimation of, in manganiferous iron ores, ii, 1.
—— —— quantitative separation of, in ferromanganese ores, ii, 805.
Manganese, nickel, zinc, and lead, estimation of, ii, 924.
Manganese and phosphorus, determination of, in spiegeleisen, ii, 648.
Manganese and silicon, preparation and use in casting steel of alloys of, ii, 522.
Manganiferous iron ores, estimation of manganese and iron in, ii, 1.
Manganous acid, capacity of saturation of, i, 442.
Manipulations, some simple laboratory, ii, 701.
Mannite, optical properties of, i, 249, 589.
—— schizomycetic fermentation of, ii, 214.
Mannite and its derivatives, rotatory power of, i, 449.

Manometric apparatus, note on a, i, 437.
Manures, influence of nitrogenous, on the yield of alkaloïds in certain plants, ii, 213.
—— influence of soil on the nitrification of nitrogenous organic substances in, i, 735.
Mares' milk, ii, 520.
Marshes, Algerian, salts of the, ii, 176.
Marsh-gas in mines, apparatus for estimating, ii, 806.
Mauve-noire (*Althæa nigra*), detection of, in wine, ii, 936.
Mechanical equivalent of heat and molecular weights, pretended relation between, i, 164.
Mechanical theory of heat, application of, to the study of volatile liquids, i, 162.
Melam, behaviour of, to sulphuric acid, i, 298.
Melamine sulphocyanate, ii, 309.
Melaphyr and augitic porphyry of South Tyrol, mineralogical composition of the, i, 584.
Melezitose, researches on, i, 451.
Melinophane, crystalline form of, i, 178.
Melissic acid, i, 587.
Melting-points, high, with special reference to those of metallic salts, i, 365.
—— —— new method of observing, ii, 162.
Mendelejeff's natural system, displacement of chlorine by bromine from its compounds with the elements of the 1st, 2nd, 3rd, 4th, and 8th groups of, ii, 109.
Mercaptan, ethyl-, ii, 294.
Mercaptan, sodium-, action of, on iodomethane, methene iodide, and chloroform, ii, 293.
Mercaptides, i, 585.
Mercaptides, metallic, ii, 294.
Mercuric cyanide, compounds of, with the chlorides of the earth-metals, ii, 423.
Mercuric mercaptide, ii, 295.
Mercuric sulphide, action of nitric acid on, i, 282.
Mercurothioglycollic acid, ii, 595.
Mercury, movements of electrified, i, 677.
—— presence of, in the spring "du Rocher" at the establishment of Mont Carnadore, Puy-de-Dôme, ii, 418.
—— solubility of, in water, ii, 843.
—— specific heat of, i, 678.
—— volumetric estimation of, ii, 679.
Mesaconic acid, i, 591.
Mesaconic acid, addition-products of, ii, 737.
—— —— crotonic acid from, ii, 735.
—— —— dibromopyrotartaric acid from, ii, 738.
—— —— relation of, to citraconic acid, ii, 430.
Mesityl oxide, bodies analogous to, ii, 733.
Mesitylene-sulphonic acids, oxidation of, ii, 777.
Mesole from Puy-de-Dôme, ii, 283.
Mesoxalic acid, constitution of, ii, 102.
Metabolism of albumins, action of arsenic on the, ii, 912.
Metabromobenzenesulphonate of silver, action of bromine on, ii, 459.
Metabromobenzenesulphonic acid, ii, 458.
Metacellulose (fungin), i, 229.
Metal, division of the positive, between two acids in the galvanic circuit, i, 677.
Metallic compounds, presence of, in alimentary substances, ii, 912.
Metallic oxides and hydrogen dioxide, i, 6.
Metallic sulphates, action of hydrochloric acid on, ii, 840.
Metallic sulphides, dissociation of ammoniacal salts in presence of, ii, 829.
Metallurgical hearths, utilisation of the gases issuing from, ii, 949.
Metals accompanying iron, ii, 523.
Metals, affinity of, for sulphur and oxygen, ii, 704.
Metals of the alkaline earths, determination of potassium as platinochloride in presence of the chlorides of the, ii, 220.
Metals dipped in water or in saline solutions, effect of sunlight on the electrical behaviour of, ii, 818.
Metals, elasticity of, at different temperatures, i, 58; ii, 162, 700.
—— gases evolved in the action of, on nitric acid, ii, 54.
—— quantitative estimation of by electrolysis, i, 340.
—— spectra of, at the base of flames, ii, 105.
Metals and hydrogen dioxide, i, 1.
Metals and paper, diathermaneity of, ii, 405.
Metanethol camphor, ii, 480.
Metanitrophenol, conversion of, into trinitroresorcin, ii, 475.
Metazocarboxylbenzene - metadimethylamidocarboxylbenzene, ii, 456.
Meteoric iron, Neuntmannsdorf, of the Dresden Museum, ii, 177.
Meteoric stone of Waconda, Mitchel County, Kansas, i, 290.

Meteorites, carbon-compounds in, i, 288.
—— formation of, and volcanic agency, i, 178.
—— gases contained in, i, 289, 702.
—— pitted surface of, i, 180.
—— relation of the action of gases produced by the explosion of dynamite to, and to the circumstances attending the arrival of these bodies in our atmosphere, ii, 835.
Meteorological purposes, some analytical processes for ammonia, ii, 510.
Methacrylic acid, ii, 736.
Methane, iodo-, action of sodium-mercaptan on, ii, 293.
Methazonic acid, azo-compounds of, ii, 325.
Methazonic acid, azoparatolyl-, ii, 326.
Methene-dibenzamide, i, 314.
Methene iodide, action of sodium-mercaptan on, ii, 293.
Methyl acetoxyterephthalate, di-, ii, 337.
Methyl alcohol, action of sulphuryl chloride on, ii, 288.
—— —— methods of estimating, in the manufacture of colouring matters, ii, 229.
Methyl alcohol and ethyl chlorosulphate, ii, 290.
Methyl bromide, action of, on aniline, ii, 604.
Methyl carbinol, tri-, action of dilute sulphuric acid on, ii, 874.
Methyl chloride, action of, on aniline, ii, 604.
Methyl chlorosulphate and ethyl alcohol, ii, 290.
Methyl ethers of resorcin, ii, 474.
Methyl iodide, action of, on aniline, ii, 604.
Methyl ketone, oxidation of di-, ii, 425.
Methyl oxide, monochloro-, ii, 424.
Methyl oxyterephthalate, di-, ii, 337.
Methyl santonate, i, 470.
Methylamine, tri-, reactions of an aqueous solution of, upon metallic solutions, ii, 358.
Methylaniline, ii, 885.
Methylaniline, salicein of, ii, 605.
Methylaniline, amidodi-, ii, 603.
Methylaniline, benzoyl-di-, ii, 606.
Methylaniline, di-, reactions of, ii, 886.
Methylaniline, di-, synthesis of ketones by, ii, 333.
Methylaniline, di-, action of benzoyl chloride on, ii, 334.
Methylaniline, monobromodi-, ii, 605.
Methylaniline, mono-, ii, 325, 604, 755.
Methylaniline, mononitrodi-, ii, 603.
Methylanthracene, i, 610.
—— —— occurrence of, in coal-tar, ii, 624.
Methyl butylsulphate, ii, 291.
Methylene bromide, tri-, preparation of, i, 59.
Methyl-ethyl ketone, pinacone and pinacolin from, ii, 427.
Methylethyloxamide and methyloxamethane, ii, 187.
Methylhydroxylamine, ethers of, i, 188.
Methylorthoxyphenylacrylic acid, i, 414.
a-Methylorthoxyphenylacrylic acid, action of pentachloride of phosphorus on, i, 421.
Methylorthoxyphenylangelic acid, i, 416.
Methylorthoxyphenylcrotonic acid, i, 415.
Methyloxamethane, ethyloxamethane, and methylethyl-oxamide, ii, 185.
Methyloxamide, di-, derivatives of, ii, 185.
Methyloxamide, mono- and di-, ii, 186.
Methylparoxyphenylacryl chloride, i, 410.
Methylparoxyphenylacrylamide, i, 410.
Methylparoxyphenylacrylic acid, i, 408.
Methylparoxyphenylangelic acid, i, 413.
Methylparoxyphenylcrotonic acid, i, 411.
Methylparoxyphenylpropionic acid, i, 411.
Methylphenyloxamide, ii, 187.
Methylphosphophenyl chloride, ii, 451.
Methyl-propyl ketone, oxidation of, ii, 426.
Methyl-quinine, sulphato-periodides of, i, 212.
Methyl-salicylic aldehyde, acids from, i, 414.
Micro-chemistry as applied to the identification of tea-leaves, ii, 517.
Microzymes of germinated barley and of sweet almonds, as producers of diastase and synaptase, in reference to a note of Pasteur and Joubert, i, 106.
Milk, an abnormal sample of new, i, 232.
—— analysis of, ii, 941.
—— coagulation of, by rennet, i, 101.
—— differences in unadulterated, ii, 373.
—— estimation of matter precipitated from, by rennet, ii, 940.
—— estimation of nitrogen in, ii, 941.
—— influence of cold on the curdling of, ii, 206.
—— new method of analysing, and on a new carobhydrate in, ii, 517.

Milk of mares, ii, 520.
Milk and its educts, determination of nitrogen in, ii, 233.
Milk and milk-products, error in the estimation of fat in, ii, 941.
Milk and similar organic substances, detection of salicylic acid in, ii, 227.
Milk-glass, manufacture of, ii, 946.
Mineral analysis, note on, ii, 916.
Mineral, new Cornish, i, 56.
Mineral resin and lignite coal from Bovey Heathfield, Devonshire, gases enclosed in, ii, 146.
Mineral substances, equivalent substitution of, in animals and plants, i, 98.
Mineral substances in flour, detection of foreign, i, 753.
Mineral strength of soils, some experiments made with a view to ascertain the practical nature of a proposed method of determining the, by means of water culture, i, 156.
Mineral waters, presence of strontium in, ii, 577.
Mineral waters of Neudorf, near Petschau in Bohemia, analysis of, ii, 861.
Mineralogical and crystallographical notices (v. Lasaulx), i, 53.
Minerals accompanying the graphite of Mugrau, Bohemia, ii, 859.
Minerals, action of organic acids on, ii, 358.
—— disintegration of refractory, by fusion with a mixture of sodium fluoride or chloride and potassium sulphate, ii, 918.
—— description of various, ii, 850.
—— estimation of zinc and lead in, by electrolysis, ii, 804.
Mines, apparatus for estimating marsh-gas in, ii, 806.
Mistletoe (*Viscum album*), chemical study of, ii, 211, 636.
Molasses, method of increasing the yield of potassium carbonate from, ii, 816.
Molecular changes, ii, 405.
Molecular compounds, i, 274.
Molecular transformation, ii, 285.
Molecular volumes, note on, ii, 831.
Molecular weights and mechanical equivalent of heat, pretended relation between, i, 164.
Molecules, application of the principle of dissimilar, to the explanation of the phenomena of supersaturated solutions, superfused bodies, spontaneous explosions, and the gradual crystallisation of amorphous bodies, i, 435.
Molybdate of ammonium, effect of silicic acid on the estimation of phosphoric acid by, i, 344.
Molybdate of ammonium, estimation of phosphorus and arsenic by, ii, 738.
Molybdenum, solution of, in nitric acid, ii, 222.
Molybdenum glance, substances which accompany, i, 285.
Molybdenum and tungsten, higher oxides of, i, 141.
Molybdic acid, platino-, ii, 848.
Molybdic acid, sublimed, as an object for the polarizing microscope, i, 691.
Monamines, aromatic, action of monochloracetic acid on the thiocyanates of, ii, 873.
Monethyl-tetrabromofluorescein, colourless, i, 203.
Monochloracetic acid, action of, on the thiocyanates of the aromatic monamines, ii, 873.
Monochlorethylcrotonic acid, ii, 591.
Monochlorinated acids of the acrylic series, ii, 590.
Monochlorodiethoxylethane, preparation of, i, 291.
Monochloromethyl oxide, ii, 424.
Monochloromethylcrotonic acid, ii, 591.
α-Monochloropropionitril, i, 297.
Mononitro-β-naphthol, i, 51.
Morphine, determination of, in opium, ii, 231.
—— new reaction of, ii, 808.
—— testing of quinine salts for, i, 748.
Morphine hydriodide and hydrobromide, ii, 343.
Morphine and its salts, action of sulphuric acid and oxidising agents on, ii, 906.
Mottramite, i, 445.
Mucic acid, new derivatives of, i, 65.
Mucus, urinary, non-existence of, ii, 632.
Munjistin, i, 668; ii, 788.
Muscarine and allied ammonium bases, synthesis of, ii, 198.
Muscarine and some allied bases, critical notes on, ii, 628.
Muscovite, pseudomorph of, after prosopite, i, 700.
—— pseudomorph of, after prosopite and topaz, i, 699.
Mushrooms, composition of edible, i, 338.
Mustard oils (thiocarbimides), action of alcoholic potash on, i, 68.
Myall-wood, i, 119.
Myricyl alcohol and ethers, i, 586.
Myricylamine, i, 587.

N.

Nacrite, pseudomorph of, after prosopite, i, 700.
Naphthalene, action of antimony trichloride on, at a red-heat, ii, 553.
—— action of hydriodic acid on, i, 466.
—— action of tin tetrachloride on, ii, 555.
—— bromine derivatives of, ii, 901.
—— chlorine derivatives of, ii, 899.
Naphthalene, azo-, ii, 623.
Naphthalene chlorides, ii, 899.
Naphthalene chlorides, chloro-, ii, 900.
Naphthalene derivatives, isomeric, i, 466, 712; ii, 563, 622, 898.
—— —— melting points of, ii, 563.
Naphthalene, dichloro-, analogous to nitronaphthylsulphurous acid, i, 467.
—— —— two new modifications of, i, 207.
Naphthalene, γ-dichloro-, derivatives of, ii, 901.
Naphthalene, α- and β-dinitro-, derivatives of, i, 466.
Naphthalene, dioxy-, ii, 899.
Naphthalene group, experiments to determine the α-position in the, i, 599.
—— —— researches on the, i, 597.
Naphthalene, hex- and octo-hydro-, ii, 899.
Naphthalenes, bromo- and chloro-, i, 607.
Naphthalenes, bromonitro-, i, 606.
Naphthalenes, chloro-, ii, 901.
Naphthalenes, dibromo-, i, 713.
Naphthalenes, nitro-, action of phosphorus pentachloride on, i, 85.
Naphthalenesulphinic acids, i, 315.
Naphthionic acid, transformation of, into $C_{10}H_{16}Br_2$, ii, 902.
α- and β-Naphthoic acids, some derivatives of, i, 317.
β-Naphthol, mononitro-, ii, 51.
β-Naphthol, nitroso-, ii, 47.
Naphthol, trinitro-, ii, 898.
Naphthols, amido-, i, 603.
Naphthols, nitro- and nitroso-, i, 602.
Naphthoquinone, i, 605.
β-Naphthoquinone, ii, 52.
Naphthyl, di-, a new, obtained by the action at a high temperature of certain volatile metallic chlorides on naphthalene, ii, 559.
Naphthyl, isodi-, the sulpho-acids and salts of, ii, 556.
Naphthyl, isodi-, cyanogen derivative of, ii, 558.
Naphthyl, isodi-, nitro-, ii, 558.
Naphthyl, oxydi-, ii, 558.
Naphthyls, di-, positions of the three isomeric, ii, 563.
Naphthylamine, β-, i, 605.
Naphthylamine, α-nitroso-, i, 599.
α-Naphthyldisulphurous acid, ii, 902.
Naphthylenediamine, i, 601.
Naphthylene-sulphonic acids, amides of, ii, 490.
Naphthylsulphonic acids, nitro- and amido-, and their derivatives, i, 208.
Naphthylsulphurous acid, α-di-, ii, 902.
Naphthylsulphurous acid, nitro-, dichlorinated naphthalene analogous to, i, 467.
Naphthylsulphurous acids, nitro- and amido-, and their derivatives, ii, 469.
Naphthylthiocarbamide, i, 70.
Narcotine, cotarnine, and hydrocotarnine. Part V. New cotarnine derivatives and nor-opianic acid, ii, 525.
Nasturtium officinale, analysis of, ii, 210.
Nephelin and apatite, microscopical discrimination of, ii, 411.
Neptunium, a new metal, ii, 166.
Nickel, action of, on nitric acid, ii, 81.
—— estimation of, by precipitation as oxalate, ii, 924.
Nickel fluoride, ii, 839.
Nickel mercaptide, ii, 295.
Nickel ore from New Caledonia, i, 285.
Nickel ores, i, 581.
Nickel and cobalt, estimation of, by electrolysis, ii, 925.
—— —— manufacture of large castings of, i, 238.
—— —— separation of, ii, 925.
—— —— separation of arsenic from, ii, 573.
—— —— separation of, by xanthate of potassium, ii, 599.
—— —— thermo-chemical researches on, i, 574.
—— —— a natural hydrated oxide of, ii, 855.
Nickel, cobalt, manganese, and zinc, separation of iron from, ii, 924.
Nickel, zinc, lead, and manganese, estimation of, ii, 924.
Nicotine, conine, and sparteine, improved method of obtaining, i, 714.
Niobates or columbates, examination of American, ii, 714.
Niobates, two new, ii, 576.
Niobium mineral, new, from Amherst Co., Virginia, ii, 853.
Nitracetonaphthalide, reduction of, i, 600.
Nitrate of ammonium, action of MnO_2 on, ii, 112.
Nitrate of silver, attempt to form double salts of, with other nitrates, ii, 843.
—— —— reduction of, by hydrogen, i, 282.

Nitrates, attempt to form double salts of silver nitrate and other, ii, 843.
—— Schönbein's test for, ii, 219, 799.
—— Thorpe's and Bunsen's methods for the estimation of nitrogen in, ii, 799.
Nitrates of bismuth, ii, 572.
Nitrates and nitrites, does ozone combine with free nitrogen in presence of alkalis to form? i, 438.
Nitric acid, action of, on carbanilide, ii, 886.
—— —— action of dilute, on brucine, ii, 499.
—— —— action of, on mercuric sulphide, i, 282.
—— —— action of, on tribromophloroglucin, ii, 193.
—— —— application of Pelouze's process to the estimation of small quantities of, i, 227.
—— —— determination of, by indigo, i, 735.
—— —— gases evolved in the action of metals on, ii, 54.
—— —— some products of the action of red fuming, on coal gas, ii, 287.
—— —— solution of molybdenum in, ii, 222.
—— —— various methods of determining, ii, 643.
Nitric and carbolic acids, tests for, ii, 919.
Nitric and nitrous acids, diphenylamine as a test for, ii, 918.
—— —— estimation of, ii, 642.
Nitric acid and the oxides of nitrogen, researches on the reduction of,—Part I. On the gases evolved in the action of metals on nitric acid, ii, 54.
Nitric oxide, decomposition of, by pyrogallate of potash, ii, 35.
Nitrification of nitrogenous organic substances in manures, influence of soil on, i, 735.
Nitrification by organised ferments, ii, 215.
Nitrils, action of, on the haloïd ethers of benzyl, i, 466.
—— direct conversion of, into compound ethers, ii, 874.
Nitrils, aromatic, preparation of, ii, 602.
Nitrils, iso-, action of hydrogen sulphide, ii, 604.
Nitrite of silver, action of, on benzoyl iodide, i, 310.
Nitrites, alkaline, preparation of, i, 685.
Nitrites and nitrates, does ozone combine with free nitrogen in presence of alkalis to form? i, 438.
Nitro-acids, synthesis of, ii, 483.
Nitroalizarin, application of, to steam dyeing, ii, 950.
Nitrobenzoic acid, benzo-, ii, 483.
Nitrobenzoic acids, ii, 483.
—— —— melting points of, ii, 782.
Nitrobenzoyl, i, 315.
Nitro-chrysazin, i, 612.
Nitro-chrysophanic acid, i, 611.
Nitro-compounds, orthodi-, i, 594.
Nitro-derivatives of salicylic aldehyde, i, 597.
Nitrodimethylaniline, ii, 603.
Nitroethane, action of various bodies on, i, 297.
Nitrogen, absorption of free, by the proximate principles of vegetables under the influence of atmospheric electricity, i, 222.
—— determination of, in milk and its educts, ii, 233.
—— estimation of, in milk, &c., ii, 941.
—— estimation of total, in manures, soils and various products of sugar-works, i, 227.
—— fixation of, on organic substances, under the influence of feeble electric tensions, ii, 862.
—— in nitrates, Thorpe's and Bunsen's methods for the estimation of, ii, 799.
—— does ozone combine with free, in presence of alkalis to form nitrites and nitrates? i, 438.
—— quantivalence of, ii, 838.
—— relation of phosphoric acid to, in urine, ii, 205.
—— Sachsse and Kormann's method for the determination of, when existing in the form of amides, ii, 917.
—— Will and Varrentrapp's method for determining, ii, 917.
—— polybasic compounds of the acids of, i, 296.
Nitrogen oxides and nitric acid, researches on the reduction of, Part I; ii, 45.
Nitrogen tetroxide, estimation of, in organic substances, i, 228.
Nitrogenous manures, influence of, on the yield of alkaloïds in certain plants, ii, 213.
Nitrogenous organic substances in manures, influence of soil on the nitrification of, i, 735.
Nitronaphthols, i, 602.
Nitronaphthylsulphonic acid and its derivatives, i, 258.
Nitronaphthylsulphurous acid, dichlorinated naphthalene analogous to, i, 467.
Nitro-parabenzoic aldehyde, ii, 781.
Nitroso-chlorides of the terpenes, preparation of the, ii, 554.

Nitroso-β-naphthol, ii, 47.
Nitrosotriacetonamine, ii, 428.
—— decomposition of, by acids, ii, 583.
—— production of phorone from, ii, 583.
Nitroso-terpenes, isomeric, i, 554.
Nitrostearic acid, i, 590.
Nitrous acid, action of, on substituted amides, ii, 607.
Nitrous sulphuric acid, denitrification of, by sulphurous acid, ii, 944.
Nitrous and nitric acids, diphenylamine as a test for, ii, 918.
—— —— estimation of, ii, 642.
Nitrous acid and organic matter, determination of, in potable waters, ii, 647.
Nobili's rings on gold, i, 677.
Non-saturated compounds, so-called, ii, 429.
Nordenskiöld iron-mass, the, and the occurrence of native iron in basalt, ii, 578.
Noropianate, isomethyl, or methyl aldehydovanillate, ii, 487.
Noropianic acid, ii, 525, 545.
Nuclein, occurrence of, in the human brain, i, 221.

O.

Oak-bark, chemistry of, i, 720.
Oatmeal, estimation of barley in, i, 348.
Obituary notices of deceased Fellows, i, 493.
Octohydronaphthalene, ii, 899.
Œnanthol, ii, 123.
Œnanthylic acid, normal ii, 879.
Œnotannin, ii, 897.
Oil, effect of coating wheat with, ii, 954.
Oil of bitter almonds, artificial, i, 315.
Oil, essential, of true augustura bark, ii, 932.
Oil, essential, of the fruit of *Heracleum sphondylium*, ii, 425.
Oil, volatile, from styrax, i, 478.
Oils, testing of, i, 348.
Oils, essential, limited oxidation of, and preliminary report on the ethers, i, 183.
Oils, fatty, action of, on copper, i, 237.
Oils, fatty, testing of, ii, 228.
Oils, fixed, method of detecting and estimating in balsam of copaiba, ii, 374.
Oils, mineral, origin of, ii, 283.
Oleum theobromæ, detection of adulterations in, ii, 931.
Olive oil, testing of, ii, 228.
Olivenite, occurrence of, in greenstone, ii, 283.
Opal-glass, manufacture of, ii, 946.
Opianic acid, isonor-, or aldehydoprotocatechuic acid, ii, 488.
Opianic, hemipinic, and quercimeric acids, isomerides of, ii, 487.
Opium, determination of morphine in, ii, 231.
Opium-extract, insoluble matter from, i, 720.
Orcin, dinitro-, i, 548.
Orcin, dinitroso-, i, 545.
Orcin-phthalein and orcin-phthalin, i, 205.
"Ore reducer" slag, determination of copper in, ii, 650.
Organic acid, on a new naturally-occurring, ii, 620.
Organic acids, action of, on minerals, ii, 358.
—— —— thiamides of monobasic, i, 616.
Organic bodies, action of chlorochromic acid on, i, 584.
—— —— phosphorescence of, reply to the remarks of E. Chevreul respecting the, ii, 863.
Organic compounds, action of magnesium on some, ii, 285.
—— —— equivalents of, ii, 862.
—— —— method of estimating the halogens in, ii, 225.
Organic constituents of barley and malt, i, 224.
Organic matter, determination of, in potable waters, ii, 647, 806.
—— —— putrescent, in potable waters, ii, 812.
Organic substances, estimation of nitrogen tetroxide in, i, 228.
—— —— fixation of nitrogen on, under the influence of feeble electric tensions, ii, 862.
—— —— in manures, influence of soil on the nitrification of nitrogenous, i, 735.
—— —— new method for the gravimetric or volumetric determination of phosphorus, arsenic, sulphur, chlorine, bromine, and iodine in, i, 739.
Organism, behaviour of terpenes in the, i, 487.
Organo-zinc compounds, action of acid chlorides on, ii, 732.
—— —— action of, on the chlorides of acid radicles, ii, 310.
Orthodinitro-compounds, i, 594.
Ortho-group, condensations in the, i, 302.
Orthonitrometabromobenzoic acids, action of potassium cyanide on, i, 311.
Orthoparamidophenol, benzoyl-compounds of, ii, 193.
Ortho-series, condensation in the, ii, 752.

Orthotoluic aldehyde, ii, 894.
Orthoxylene, occurrence of, in coal-tar, ii, 600.
Ostruthin, i, 717.
Otto of limes, ii, 548.
Oxalate, ethylic, action of zinc and allyl iodide on, i, 60.
Oxalate of silver, action of, on the bromides of ethene and propene, ii, 422.
Oxalates, action of solutions of alkaline carbonates on earthy, ii, 245.
—— action of solutions of the alkaline, on earthy carbonates, ii, 245.
—— estimation of, ii, 358.
Oxalic acid, action of, on resorcin at high temperatures, ii, 889.
—— —— commercial, contaminated with sulphuric acid, ii, 641.
—— —— electrolysis of aqueous solutions of, i, 455.
—— —— estimation of, ii, 358.
—— —— occurrence of, in fungi, ii, 796.
—— —— reaction of, with orthoamidophenol, ii, 753.
—— —— waste material of the parchment manufacture as a source of, ii, 380.
Oxalic acid and monatomic alcohols, reciprocal action of, i, 183.
Oxalic acid, diallyl-, ii, 738.
Oxamethane, action of acetyl chloride on, i, 614.
—— action of benzoyl chloride on, i, 615.
Oxamethanes, ethyl- and methyl-, ii, 185.
Oxamide, dimethyl-, derivatives of, 185.
Oxamide, methyl-, diderivatives of, ii, 185.
Oxidation, apparatus for, ii, 275.
Oxidations, effect of light on, ii, 818.
Oxides of bismuth, i, 649.
Oxidising agents, behaviour of various amylenes to, ii, 421.
—— —— behaviour of certain ketones to, ii, 425.
Oxidising agents and sulphuric acid, action of, on morphine and its salts, ii, 906.
Oxyacids, action of chloral and bromal on, i, 79.
—— action of chloroform on aromatic, in alkaline solution, i, 83.
—— oxidation of, ii, 309, 582.
Oxyammonia, thermic formation of, i, 46.
Oxyanthraquinone, i, 609.
Oxyanthraquinones, amido-compounds of the, i, 612.
Oxybenzoic acid (para-), action of chloroform on, in alkaline solution, i, 83.
Oxybenzoic acid (para-), derivatives of, ii, 895.
Oxybenzoic acids, action of sodium amalgam on the three isomeric, ii, 338.
—— —— contributions to the knowledge of the three isomeric, ii, 337.
Oxybenzyl acetate, acid, ii, 339.
Oxybenzyl alcohol, ii, 338.
Oxybutyric acid (α-), synthesis of, i, 60.
Oxychrysazin, i, 612.
Oxydinaphthyl, ii, 558.
Oxydracylic acid, orthaldehydo-, i, 84.
Oxyfluotungstate of sodium, ii, 848.
Oxygen, action of electrolytic, on glycol, ii, 300.
—— action of phosphorus on iodates in presence of atmospheric, i, 578.
—— occluded, presence of in steel, especially in Bessemer steel, ii, 815.
Oxygen and hydrogen, heat of combustion of the explosive mixture of, in closed vessels, ii, 690.
Oxygen and sulphur, affinity of metals for, ii, 704.
Oxygen-molecule, experiments to determine the heat of formation of the, i, 1.
—— thermo-chemistry of the, i, 8.
Oxyhæmoglobin, conversion of carbonylhæmoglobin into, ii, 346.
Oxyheptylic acid, identity of Helm's, with Ley's acid, ii, 882.
Oxyphthalanilic acid, i, 305.
Oxyphthalic acid, ii, 784.
Oxyphthalic anhydride, ii, 785.
Oxypyrotartaric acid (normal), and its isomerides, i, 63.
Oxysulphobenzide, crystalline form, specific gravity, and molecular volume of, i, 79.
Oxyterephthalic acid, ii, 336.
—— decompositions of, ii, 337.
Oxythymoquinone, constitution of, i, 463; ii, 476, 891.
Ozokerite, Galician, and cerisin, ii, 284.
Ozone, does it combine with free nitrogen in presence of alkalis to form nitrites and nitrates? i, 438.
—— energy due to the formation of, i, 10.
—— production of, by the pulverisation of water, i, 43.
Ozone, atmospheric, gravimetric determination of, ii, 916.

P.

Pachnolite and cryolite, ii, 281.
Pachnolite and thomsenolite, ii, 119.

Palladiocyanide of potassium, i, 456.
Palladium, behaviour of, in an alcohol-flame, i, 437.
—— electro-chemical deposition of, i, 161.
—— some new properties of, i, 166.
—— use of, instead of silver in electro-deposition, ii, 239.
Palladium mercaptide, ii, 295.
Palladium-wire, dissociation of hydrocarbons by means of, and on the similarity of these phenomena to those of catalysis, ii, 830.
Palladium and platinum, thermo-chemical researches on, ii, 566.
Palladium-sodium chloride, adulteration of, with sodium chloride, ii, 225.
Palmitone, oxidation of, ii, 426.
Pancreas, albuminous ferment of the, 103.
Pancreatic ferments, decomposition of gelatin and albumin by, in absence of air, ii, 630.
—— —— transformation of glycogen into grape-sugar by, ii, 911.
Pancreatic juice of herbivora, ii, 204.
Paper, black-blue colour for, i, 361.
Paper and metals, diathermaneity of, ii, 405.
Paracellulose, i, 229.
Paradiamidotoluene and toluquinone, ii, 475.
Paraffins from a lava from Etna, i, 704.
Paraffins, normal, Part II, ii, 866.
—— —— action of sulphur at high temperatures on, ii, 867.
Paraglobin, mode of action of, in the coagulation of fibrin, i, 727.
Paramorphs, i, 691, 700.
Paranitro-orthosulphophenol, ii, 888.
Paraoxybenzaldehyde, derivatives of, ii, 893.
Paraoxybenzoic acid, derivatives of, ii, 895.
Paraoxybenzoic aldehyde, nitro-derivative of, ii, 781.
Parasite, pseudomorph of, after boracite, i, 698.
Paratoluene and benzene disulphide, formation of, i, 306.
Paratoluene and benzene sulphydrates, preparation of, i, 306.
Paratolyl thiobenzoate, i, 468.
Paratolylamido-dichloracetate, ethylic, i, 712.
Paratolyloxamethane, action of phosphorus pentachloride on, i, 710.
Paratolyloxamic acid, i, 712.
Paratolyphenyl ketone, some derivatives of, i, 464.
Paravinyl-anisoïl, ii, 668.
Paraxylene, preparation of, from coal-tar oil, ii, 600.
Paraxylenedicarbonic acid, i, 469.
Parchment manufacture, waste material of the, as a source of oxalic acid, ii, 380.
Patchouli-camphor, i, 478.
Peas, copper in preserved green, ii, 511.
Peat, Baltic, ii, 798.
Pectate of calcium, i, 230.
Pectin group, ii, 502.
Pectose, i, 230.
Peganite of Arkansas, identity of the so-called, with the variscite of Breithaupt and the callainite of Damour, ii, 852.
Pepper, extraction and estimation of piperine in, ii, 516.
—— testing of, ii, 232.
Pepsin, formation of, in batrachians, i, 100.
—— formation and separation of, ii, 204.
Pepsin, iso, i, 483.
Pepsin and hydrochloric acid, digestion of albuminous bodies by, i, 101.
Peptone-forming ferment in saliva, ii, 347.
Peptones, action of bile on, ii, 347.
Peptones of beer-wort, ii, 521.
Periodides, acid, ii, 571.
Perisperm, digestion of the, ii, 349.
Permanganate of potassium, action of, on a neutral solution of dulcite, ii, 877.
Peroxides, certain, and hydrogen dioxide, study of, i, 125.
Persulphocyanic acid, ii, 254.
Peruranates, i, 134.
Petroleum, new hydrocarbon obtained from the highest-boiling portions of American, ii, 867.
—— oxidation of an acid contained in crude, ii, 432.
—— refining of crude, ii, 376.
Petroleum and gas, cost of lighting and heating by, ii, 949.
Pharmacosiderite from the Garomne Mine, ii, 851.
—— occurrence of, in greenstone, ii, 283.
Phaseolus multiflorus, absorption of lime-salts and water by the leaves of, ii, 209.
Phenanthrene, ii, 491.
—— derivatives of, ii, 902.
—— synthesis of, i, 76.
Phenanthrenequinone, ii, 491.
—— new acid from, ii, 492.
—— action of ammonia on, ii, 491.
—— action of quick-lime on, i, 210.
—— dinitro-, ii, 902.
—— nitro-, i, 210.

Phenol, action of benzotrichloride on, ii, 327.
—— action of carbon tetrachloride on, in alkaline solution, i, 77.
—— decomposition of, at a red heat, ii, 613.
—— formation of, in the animal body, ii, 504.
—— volumetric estimation of, i, 746.
Phenol, amido-, action of chlorocarbonic ether on, i, 472.
—— —— reaction of, with benzoic acid, i, 302.
Phenol, α-amidonitro-, ii, 474.
Phenol, β-amidonitro-, ii, 475.
Phenol, β-diamido-, and derivatives, ii, 475.
Phenol, dibenzoyl-α-diamido-, ii, 193.
Phenol, metanitro-, conversion of, into trinitroresorcin, ii, 475.
Phenol, orthamido-, reaction of, with acetic acid, i, 302.
—— —— reaction of, with oxalic acid, ii, 753.
Phenol, orthoparimido, benzoyl-compounds of, ii, 193.
Phenol, paranitro-orthosulpho-, ii, 888.
Phenol, propyl-, i, 707.
Phenol, triamido-, action of bromine on, in presence of water, ii, 778.
Phenol, tribenzoyl-α-diamido-, ii, 193.
Phenol-forming substance in human urine, i, 330.
Phenol-phthalidin and phthalidein, i, 309.
Phenol-phthalin, i, 308.
Phenolsulphuric acids, i, 467.
Phenol and carbon dioxide, polybasic acids derived from, ii, 485.
Phenol and cresol, formation of rosolic acid from, ii. 888.
Phenol and salicylic acid reactions, relative sensitiveness of, ii, 360.
Phenol and water, mutual solubility of, ii, 473.
Phenol-colours, some new, i, 510.
Phenols, behaviour of, in the animal body, i, 486.
—— compounds of phthalic acid with, i, 195.
Phenols and alcohols, action of, on thiocarbimides, ii, 871.
Phenoxylic acid, ii, 485.
Phenyl-arseniochlorides, i, 311.
Phenyl-compounds, arsen-, ii, 452.
Phenyl chloride, methylphospho-, ii, 451.
Phenyl chloride, phosphodi-, and derivatives, ii, 453.
Phenyl, di-, chlorination of, ii, 898.
Phenyl, diphospho-, or phosphobenzene, ii, 451.
Phenyl ketone, paratolyl-, some derivatives of, i, 464.
Phenyl, orthoamido-, reaction of, with formic acid, ii, 752.
Phenyl sulphide, isophospho, ii, 449.
Phenyl thiobenzoate, i, 468.
Phenyl thiocyanate, action of bromine on, i, 67.
—— —— action of, on aldehyde-ammonia, i, 313.
Phenylacetamide, i, 619.
Phenylacetic acid, paratolyl-, ii, 618.
Phenylacetic acids, two isomeric bromonitro-, ii, 482.
Phenylacetothiamide, i, 616.
Phenylamidine, benzenyl-, isomeride of, ii, 886.
Phenylamido-dichloracetic ether, i, 711.
Phenylamine, di-, as a test for nitric and nitrous acids, ii, 918.
—— —— nitro-derivatives of, ii, 756.
Phenylangelic acid, i, 393.
Phenylarsine, diethyl-, ii, 542.
Phenylarsinic acid, i, 311.
Phenylarsinic anhydride, ii, 453.
Phenylcacodylic acid, i, 311.
Phenylcrotonic acid, i, 391.
Phenylene-acetic acid, di-, ii, 493.
Phenylene-diamine, disuccinyl-, ii, 474.
Phenylene-glycollic acid, di-, ii, 336.
Phenylene-glycollic acid, dibromodi-, ii, 493.
Phenylene-ketone, di-, ii, 493.
Phenylethylamine, i, 617.
Phenylglycol, or styrolene alcohol, ii, 614.
Phenylic ether, phospho-, ii, 449.
Phenylimide, carbodi-, ii, 886.
Phenylimidomonochloracetate, ethylic, i, 711.
Phenylmetanitraniline, dinitro-, ii, 757.
Phenylmetanitraniline, trinitro-, ii, 756.
Phenylnitrosamine acetyl-, preparation and new reactions of, ii, 885.
Phenyloxamethane, action of phosphorus pentachloride on, i, 710.
Phenyloxamide, methyl-, ii, 187.
Phenylparanitraniline, dinitro-, ii, 758.
Phenylparanitraniline, trinitro-, ii, 757.
Phenylparatolylcarbamide, ii, 886.
Phenylphosphine and oxygen, ii, 450.
Phenylphosphine and phosphobenzene, ii, 450.
Phenylphosphine and sulphur, ii, 450.
Phenylphosphonium iodide, ii, 450.
Phenylthioformamide, ii, 604.
Phenyltriamine, carbotri-, ii, 448.
Philippsite from Puy-de-Dôme, ii, 283.
Phloroglucin, action of bromine on, ii, 891.
Phloroglucin, tribromo-, action of nitric acid on, ii, 193.

Phorone, production of, from nitrosotriacetonamine, ii, 583.
Phorone-cumene, ii, 447.
Phosphate, crystallised dicalcic, i, 689.
Phosphate, ferric, composition of, ii, 844.
Phosphate of lime glass, ii, 842.
Phosphate of sodium, action of ammonia on, ii, 703.
Phosphates of copper and zinc, crystallised, i, 990.
Phosphatic guanos, i, 733.
Phosphenyl chloride, behaviour of, at a high temperature, ii, 453.
Phosphites, composition of certain, i, 440.
—— constitution of, i, 277.
Phosphobenzene and phenylphosphine, ii, 450.
Phosphodiphenyl chloride and derivatives, ii, 453.
Phosphonium iodide, formation of, i, 46.
Phosphophenylic ether, ii, 449.
Phosphorescence of organic bodies, reply to the remarks of E. Chevreul respecting the, ii, 863.
Phosphorescent bodies, ii, 345.
Phosphoric acid, alkalimetric estimation of, ii, 355.
—— —— in arable land, ii, 913.
—— —— detection of traces of, in toxicological researches, i, 108.
—— —— determination of iron oxide and alumina in presence of, ii, 223.
—— —— effect of silicic acid upon the estimation of, by ammonium molybdate, i, 344.
—— —— estimation of, in presence of silicic acid, ii, 353.
—— —— extraction of the so-called soluble, from superphosphates, i, 759.
—— —— new method of preparing, i, 683.
—— —— precipitation of, by ammonia in presence of lime, baryta, magnesia, alumina, and ferric oxide, i, 578.
—— —— relation of, to nitrogen in urine, ii, 205.
—— —— Stolba's method for the alkalimetric estimation of, ii, 800.
—— —— use of, in the manufacture of beet-sugar, i, 357.
—— —— volumetric estimation of, by uranium solution, i, 741.
Phosphorous acid, action of ethoxyl-compounds of phosphorus on, i, 292.
Phosphorous acid, crystallised, preparation of, ii, 701.
Phosphorous acid, hypo-, i, 275.
Phosphorous and hypophosphorous acids, i, 276.
Phosphorous chloride and mercaptan, ii, 226.
Phosphorus, action of ethoxyl-compounds of, on phosphorus chloride and phosphorous acid, i, 292.
—— action of, on iodates in presence of atmospheric oxygen, i, 578.
—— determination of, in pig-iron and iron ores, ii, 800.
—— estimation of, by ammonium molybdate, i, 738.
—— estimation of, in the form of ammonio-phosphomolybdic salt, i, 738.
—— estimation of, in iron and steel, ii, 927.
—— manufacture of rails from iron containing, ii, 240.
Phosphorus as a test for iodates, i, 344.
Phosphorus, arsenic, sulphur, chlorine, bromine, and iodine, new method for the gravimetric or volumetric determination of, in organic substances, and in vegetable and animal compounds, i, 739.
Phosphorus and manganese, determination of, in spiegeleisen, ii, 648.
Phosphorus bromochlorides, constitution of, and on molecular compounds, i, 274.
Phosphorus bronzes and their uses, ii, 376.
Phosphorus chlorides, action of ethoxyl-compounds of phosphorus on, i, 292.
Phosphorus compounds, decomposition of, i, 296.
Phosphorus oxybromochloride, i, 274.
Phosphorus oxychloride, i, 685.
Phosphorus pentabromide, action of, on amides, i, 68.
Phosphorus pentachloride, action of, on acetotoluidide, i, 91.
—— —— action of, on acid amides, ii, 182.
—— —— action of, on benzanilide, acetanilide, and acetethylamine, ii, 187.
—— —— action of, on nitronaphthalenes, i, 85.
—— —— action of, on phenyl- and paratolyl-oxamethane, ii, 710.
—— —— action of, on pyruvic acid, ii, 441.
—— —— action of, on tungstic anhydride, ii, 709.
Phosphorus pentafluoride, i, 46.
Phosphorus salt, opalescence produced by silicates in, i, 489.
Phosphotungstates, ii, 848.
Photographic image, alkaline development of the, i, 572.
Photographic processes, certain, ii, 942.

Photography: investigations on iron-developers, i, 756.
Photometric researches on coloured flames, ii, 817.
Phthaleïn, dibromomonoresorcin-, i, 204.
Phthaleïns of tertiary aromatic bases, i, 465; ii, 607.
Phthalic acid, compounds of, with the phenols, i, 195.
Phthalic acid, amido-, ii, 336.
Phthalic acid, benzoyliso-, i, 469.
Phthalic acid, oxy-, ii, 784.
Phthalic aldehyde, ii, 332.
Phthalic anhydride, action of, on aromatic diamines, ii, 783.
—— —— reaction of, with orthotolylenediamine, ii, 753.
Phthalin and phthalidein of phenol, i, 307.
Phyllic acid, a new substance contained in the leaves of certain plants, ii, 905.
Phyllocyanin as a reagent, i, 109.
Physostigmine, estimation of, ii, 367.
Phytolacca juice, detection of, in wine, ii, 936.
Picraconitine, i, 146.
Picric acid, detection of, in beer, ii, 232.
—— —— wool and cloth dyed green with, ii, 243.
Picrorocellin, i, 718.
Picrotoxin, i, 719; ii, 790.
α-Picryl- β-picrylamine, ii, 758.
α-Picryl- γ-picrylamine, ii, 758.
Pig-iron and iron-ores, determination of phosphorus in, ii, 800.
Pigment of the negro skin, chemical character of the, i, 329.
Pigmentum nigrum, the black colouring-matter contained in hair and feathers, i, 427.
Pigs, assimilation of different sorts and mixtures of foods by, i, 98.
Pilinite, i, 54.
Pilocarpine from jaborandi, ii, 907.
Pimaric acid, ii, 341.
Pinacolin, an 8-carbon, ii, 306.
Pinacolin and pinacone from methyl-ethyl ketone, ii, 427.
Piperine in pepper, extraction and estimation of, ii, 516.
Piperine, pharmacological group of, ii, 195.
Piperonal, vapour-density of, ii, 894.
Plant, metamorphoses of the groups COOH, CH.OH, CH_3, and CH_2 in the living, i, 223.
Plant-nourishing value of calcium salts, i, 735.
Plant-nutrients, loss of, through rivers, ii, 213.
Plant respiration, dependence of, upon temperature, i, 334.
Plants, absorption and emission of gas by the roots of, ii, 350.
—— action of carbonic oxide on, i, 334.
—— analyses of, ii, 210.
—— decomposition of carbonic acid in the solar spectrum by the green parts of, ii, 635.
—— experiments on the respiration of, i, 331.
—— influence of coelestine on the constituents of, ii, 281.
—— influence of light and of radiant heat on the transpiration of, ii, 349.
—— influence of nitrogenous manures on the yield of alkaloïds in certain, ii, 213.
—— nutritive value of the cellular tissue of, ii, 347.
—— phyllic acid from the leaves of certain, ii, 905.
—— rise of sap in, ii, 348.
—— study of the ferments contained in, i, 488.
Plants and animals, equivalent substitution of mineral substances in, i, 98.
—— —— presence of zinc in the bodies of, ii, 504.
Plants and the atmosphere, exchanges of gas between, ii, 350.
Plastering, influence of, on the weight of the dry extract of wine, i, 756.
Plating and gilding solutions, analysis of, ii, 224.
Platinites, bromo-, ii, 276.
Platinites, chloro-, ii, 276.
Platinocyanide, thallious, ii, 251.
Platino-molybdates, ii, 848.
Platino-nitrites, action of iodine and alcohol on the, ii, 710.
Platino-nitrosic acid, a new, ii, 711.
Platino-tungstates, ii, 848.
Platinous hydrate, ii, 276.
Platinum, penetration of, by electrolytic gases, ii, 161, 271.
—— recovery of, from chloroplatinates, ii, 574.
—— use of, in the ultimate analysis of carbon compounds, i, 228.
Platinum and graphite, certain chemical effects of oxygenised, ii, 710.
Platinum and palladium, thermo-chemical researches on, ii, 566.
Platinum-compounds, preparation of, ii, 276.
Platinum-ore from the Ural mountains, ii, 177.
Platinum-salt containing two ammonium bases, i, 592.
Platinum sulphide, oxidised, constitution and properties of, ii, 114.
Platonitrites, ii, 115.

Plumboglycollic acid, ii, 596.
Poison of the Cobra de Capello, ii, 206.
Poison, natural, of the human corpse, i, 331.
Poisonous properties of putrefied blood: experiments showing that they arise from organised ferments, ii, 506.
Poisons, vegetable, some reactions of, i, 749.
Polarisation current, change in the direction of, after the passage of an oppositely directed galvanic current, ii, 819.
Polarised light, effect of temperature on the power of the solutions of quinine to rotate, i, 322.
Polydymite, a new nickel ore, i, 581; ii, 858.
Polyporic acid, ii, 620.
Polythiohydrates of strychnine, ii, 789.
Porphyritic syenite-granite from Watab, Minnesota, ii, 724.
Porphyry of South Tyrol, augitic, mineralogical composition of, i, 584.
Potable waters, determination of nitrous acid and organic matter in, ii, 647.
—— —— determination of the organic matter in, ii, 806.
—— —— putrescent organic matter in, ii, 812.
Potash, action of, on trichlorobutyric acid, i, 59.
—— determination of, ii, 921.
—— direct determination of soda in, ii, 510.
—— estimation of, as platino-chloride in presence of the chlorides of the alkaline earth-metals, ii, 220.
—— estimation of, as acid tartrate, i, 341.
—— new salts of bismuth and their use in the detection of, i, 50.
Potash, alcoholic, action of, on monobromiso-butyric acid, ii, 313.
—— —— action of, on the mustard oils (thiocarbimides), i, 68.
Potash-alum, decomposition of crystallised, at 100°, ii, 166.
Potash and soda, direct preparation of, from their chlorides, ii, 945.
Potassium bromide and iodide, preparation of, i, 277.
Potassium bromide and sodium chloride, double decomposition of, in the animal organism, i, 731.
Potassium bromoplatinite, ii, 276.
Potassium carbonate, method of increasing the yield of, from molasses, ii, 816.
Potassium chlorate, action of hydrochloric acid on, i, 47.
Potassium chloride, combinations of ammonium chloride with, ii, 839.
Potassium chloroplatinite, ii, 276.
Potassium cuprocyanide and palladiocyanide, i, 456.
Potassium cyanide, action of, on the isomeric orthonitrometabromobenzoic acids, i, 311.
—— —— decomposition of, in carbonic acid, air, and pure hydrogen, i, 66.
—— —— pure commercial, ii, 423.
Potassium ferricyanide, action of, on metallic silver, and the conversion of silver negatives, ii, 234.
Potassium formate, decomposition of, in carbonic acid, air, and pure hydrogen, i, 66.
Potassium iodide, action of carbonic acid and light on, ii, 706.
—— —— decomposition of a solution of, by light, i, 577.
—— —— method of testing for impurities in, i, 344.
Potassium iodide and lead sulphate, mutual action of, i, 579.
Potassium mercaptide, ii, 294.
Potassium permanganate, oxidation of aromatic acetamines by, i, 90.
Potassium peruranate, i, 140.
Potassium salts, decomposition of some ammonium salts by, i, 490.
Potassium sulphite, action of neutral, on the quinones, ii, 892.
Potassium sulphydrate, action of, on chloral hydrate, i, 188.
Potassium thiosulphate, i, 278.
Potassium tri-iodide, i, 249.
Potassium xanthate as an antiseptic, ii, 954.
Potassium and sodium, separation of, ii, 921.
Potatoes, change of composition of, during disease, i, 732.
—— relation between the quantity of starch contained in, and their relative density, ii, 233.
Potato-starch, best means of utilising the waste water in the manufacture of, ii, 943.
Poultry, excrements of, ii, 792.
Precipitates, quantitative determination of, without washing and drying, ii, 638.
Pressures less than one atmosphere, compressibility of gases at, i, 164.
Primula-camphor, primulin, and cyclamin, ii, 903.
Privet-berry juice, detection of, in wine, ii, 937.
Propene bromide, action of silver oxalate on, ii, 422.
Propionic acid, simple method of obtaining, from propionitril, ii, 179.

Propionic acid β-amido, ii, 311.
Propionic acid, α-dichloro-, behaviour of, to nascent hydrogen, ii, 181.
—— —— conversion of, into acetic and carbacetoxylic acids, ii, 181.
—— —— dichloro-, conversion of, into monachloracrylic acid, ii, 181.
—— —— conversion of, into monochloracrylic and pyroracemic acids, ii, 181.
—— —— preparation of, ii, 180.
—— —— salts of, ii, 180.
Propionic acid, β-guanido-, ii, 311.
Propionic acid, β-iodo-, preparation of, ii, 312.
Propionic acid, tribromodinitro-, ii, 193.
Propionic acids, dichloro-, formed from dichloropropionitril, ii, 180.
Propionitril, simple method of obtaining propionic acid from, ii, 179.
Propionitril, dichloro-, constitution of, i, 298.
—— —— solid, ii, 182.
—— —— dichloropropionic acids formed from, ii, 180.
Propionitril, α-monochloro-, i, 297.
Propionylpropionate of ethyl, ii, 439.
Propylallylbenzene, iso-, ii, 664.
Propylbenzene and propylphenol, i, 707.
Propylbutenylbenzene, iso-, ii, 665.
Propylene, inability of, to combine with water, ii, 729.
Propylene, normal, ii, 728.
Propyl-isopropyl-benzene, synthesis of, i, 77.
Propyl-methyl ketone, oxidation of, ii, 426.
Propylphenol and propylbenzene, i, 707.
Propylvinylbenzene, iso-, ii, 663.
Protein and asparagin, relation between, ii, 199.
Protein crystalloïds from *Bertholletia excelsa*, ii, 200.
Prussic acid from *Cassava*, ii, 515.
Pseudomorphs, mineral, i, 691.
Pseudomorphs, zonal structure and formation of, i, 698.
Pseudopurpurin, constitution of, ii, 495.
Pseudosulphocyanogen (CNSH), i, 195.
Psittacinite, i, 177.
Pumpkin, occurrence of an amide of glutamic acid in the young plants of the, ii, 324.
Purpuramide, i, 613.
Purpurin, i, 670; ii, 624.
Purpurin, action of heat on, i, 674.
—— a colouring-matter found in commercial, i, 666.
—— detection of small quantities of alizarin in mixtures of alizarin and, i, 665.
Purpurin, synthesis of a new isomeride of, i, 209.
Purpurin, bromo-, i, 673; ii, 625.
Purpurin (ε-), i, 668; ii, 788.
Purpurin, pseudo-, constitution of, ii, 495.
Purpurin, triacetyl, i, 673; ii, 625.
Purpuroxanthic acid, i, 666, 668.
Purpuroxanthin, i, 613.
Purpuroxanthincarbonic acid, ii, 788.
Pyrargyrite from Andreasberg, ii, 173.
Pyrites, cupreous iron, method of estimating copper and sulphur in, and in the burnt ore before and after lixiviation, ii, 650.
Pyrites, preparation of sulphur from, ii, 235.
Pyrites-residues, injurious effects produced by covering roads with, ii, 236.
Pyrocitric acids, i, 590.
Pyrogallate of potash, decomposition of nitric oxide by, ii, 35.
Pyrogallol, ii, 477, 890.
Pyroracemic acid, action of ammonia and amido-derivatives on, ii, 320.
—— —— action of anthranilic acid on, ii, 322.
—— —— conversion of α-dichloropropionic acid into, ii, 181.
Pyrotartaric acid, conversion of normal, into dibromopyrotartaric and dibromosuccinic acids, ii, 592.
—— —— electrolysis of ordinary, ii, 442.
—— —— Reboul's normal, i, 188.
—— —— transformation of ordinary, into tribromethylene hydrobromide, ii, 443.
Pyrotartaric acid, dibromo-, and dibromosuccinic acid, conversion of normal pyrotartaric acid into, ii, 592.
Pyrotartaric acids, dibromo-, from citraconic and mesaconic acids, ii, 738.
Pyrotartaric acids, isomeric, i, 61.
Pyrrhotin, twin-crystal of, 583.
Pyrrhotite from Elizabeth Town, Ontario, i, 285.
Pyruvic acid, action of aniline on, ii, 596.
—— action of hydrocyanic acid on, i, 455.
—— action of phosphorus pentachloride on, ii, 441.
Pyruvic ureides, ii, 741.

Q.

Quartz, cat's-eye, ii, 411.
Quartz, pseudomorphs of, after calcite, i, 694, 696.

Quartz, pseudomorph of, after fluorspar, i, 693.
Quartzose diorite from Sauk Centre and Little Falls, Minnesota, ii, 722.
Quartzose diorite, augitic, from Watab, Minnesota, ii, 723.
Quebracho, a new tanning material, ii, 897, 951.
Quercimeric, hemipinic, and opianic acids, isomerides of, ii, 487.
Quercite, acetic and butyric ethers of, ii, 877.
—— action of heat on, i, 450.
Quicklime, action of, on phenanthrenequinone, i, 210.
Quinic acid, constitution of, ii, 418.
Quinidine sulphate, fluorescence of, i, 93.
Quinine, determination of, by precipitating with acid solution of sodium phosphomolybdate, ii, 933.
—— effect of temperature on the power of solutions of, to rotate polarised light, i, 322.
—— gravimetric determination of, as a precipitate, by potassio-mercuric iodide, ii, 933.
—— laboratory notes on, ii, 933.
—— solubility of, in ether, ii, 933.
—— solubility of, in water, ii, 933.
—— substitution of cinchonidine for, ii, 344.
—— suggestions regarding the preparation to be used when it is employed as a medicine, i, 322.
Quinine salts, testing of, for strychnine and morphine, i, 748.
Quinine sulphate, the pharmacopœia test of, ii, 642.
Quinine sulphatoperiodides, i, 211, 713.
Quinine and iron citrate, ii, 933.
Quinine and methyl-quinine, compound of, i, 212.
Quinizarin, reduction-products of, ii, 494.
Quinone, hydro-, preparation of, i, 78.
Quinone, thiohydro-, i, 81.
Quinones, ii, 614.
Quinones, action of neutral potassium sulphite on the, ii, 892.

R.

Racemic acid, pyro-, conversion of *a*-dichloropropionic acid into, ii, 181.
Radicles, action of organo-zinc compounds on the chlorides of acid, ii, 310.
Radicles, cyanides of acid, ii, 423.
Rails, manufacture of, from iron containing phosphorus, ii, 240.
Rain-water and air of Montsouris, estimation of ammonia in the, ii, 509.
Recrystallisation and regelation, i, 433.
Refuse of Paris, products of fermentation in the, ii, 915.
Rennet, coagulation of milk by, i, 101.
—— estimation of matter precipitated from milk by, ii, 940.
Resin, testing of beeswax for, ii, 642.
Resin of scammony, new method for the extraction of, ii, 950.
Resina Guaiaci Peruviana aromatica v. *odorata*, i, 716.
Resorcin, ii, 474, 613, 889.
—— action of fuming sulphuric acid on, ii, 613.
—— action of oxalic acid on, at high temperatures, ii, 889.
—— methyl ethers of, ii, 474.
—— a new yellow dye derived from, ii, 889.
Resorcin, tri-iodo-, i, 463.
Resorcin, trinitro-, conversion of metanitrophenol into, ii, 475.
Resorcindisulphonic acid, i, 312.
Resorcintrisulphonic acid, ii, 340.
Respiration, influence of, on the metamorphosis of tissue, i, 483.
Respiration of cold-blooded animals, influence of temperature on the, i, 327.
Respiration of the mammalian fœtus, ii, 502.
Respiration of plants, dependence of, upon temperature, i, 334.
—— of plants, experiments on the, i, 331.
Retene and some of its derivatives, ii, 497.
Retene, dibromo-, ii, 497.
Retene, tetrabromo-, ii, 497.
Retenedisulphonic acid, ii, 497.
Retenedisulphonic dichloride, ii, 498.
Retenepicric acid, ii, 497.
Retenetrisulphonic acid, ii, 498.
Retistene, dioxy-, ii, 498.
Rhamnus frangula, emodin from the bark of, i, 477.
Rhodeine, a new test for aniline, i, 109.
Rhodium mercaptide, ii, 295.
Rhubarb, Java, ii, 914.
Rice-starch manufacture, present state of, i, 363.
Ricinoleic acid, conversion of, into stearic acid, ii, 314.
River- and well-water, determination of impurities in, ii, 919.
Rivers, loss of plant-nutrients through, ii, 213.

Roads, injurious effects produced by covering with pyrites-residues, ii, 236.
Rock crystal, construction of scientific instruments of, i, 682.
Rocks, distribution of zircon in, ii, 577.
Rocks, crystalline, origin of, i, 57.
Rocks, crystalline, of Minnesota, ii, 580, 720.
Rocks, vitreous, devitrification of, i, 448.
Rocks, vitreous, experiments and observations on, i, 57.
Rock-salt, pseudomorph of, after carnallite or sylvite, i, 699.
Rock-salt or sea-salt, decomposition of ammoniacal distillation-products by, ii, 237.
Rogersite, ii, 576.
Roots of plants, absorption and emission of gas by, ii, 350.
Rosa gallica, colouring matter of the petals of, ii, 502.
Rosaniline, transformation of aurin into, ii, 121.
Rosaniline and fuchsine, i, 322.
Roscoelite, i, 175, 444.
Rosolic acid, detection of, in presence of fuchsine, i, 747.
—— —— formation of, from cresol and phenol, ii, 888.
Rubidium, preparation of, from lepidolite, ii, 706.
Rubidium silicotungstate, i, 175.
Rubidium and cæsium compounds, i, 685.
Rufigallic acid, i, 84; ii, 618.
Ruthenium, physical and chemical properties of, i, 443.
Rutile from the Binnenthal, after specular iron (iron-glance), ii, 856.

S.

Sabadilline, estimation of, ii, 367.
Sabatrine, estimation of, ii, 367.
Saccharifying ferments, contribution to the knowledge of, ii, 505.
Saccharine matter contained in the petals of flowers, i, 452.
Saccharine matter obtained from the leaves of the walnut, ii, 304.
Safrol, ii, 202.
Sage, terpenes from oil of, i, 557.
Sal-ammoniac, separation of, in urine, ii, 206.
Sal-ammoniac and common salt, separation of, ii, 238.
Salicein of methylaniline, ii, 605.
Salicylic acid, action of chloroform on, in alkaline solution, i, 83.
Salicylic acid, ethyl-compounds of, i, 313.
—— —— new formation of, ii, 485.
—— —— separation of, ii, 931.
—— —— simple method of estimating the value of commercial, and of detecting it in milk and similar organic solutions, ii, 227.
Salicylic acid and phenol reactions, relative sensitiveness of, ii, 360.
Salicylic acid and sodium salicylate, influence of, on bodily temperature, i, 732.
Salicylic acid, nitro-, ii, 617.
Salicylic aldehyde or salicylol, ii, 481.
Salicylic aldehyde, nitro-derivatives of, i, 597.
Salicylic aldehyde, synthesis of coumarin from, i, 708.
Saline dust, character of flames charged with, ii, 817.
Saline solutions, absorption of gases by, ii, 833.
—— —— effect of sunlight on the electrical behaviour of metals dipped in, ii, 818.
—— —— rise of temperature occasioned by passing steam into, and on the temperature of the vapours from, i, 430.
—— —— solvent action of various, upon lead, i, 660.
—— —— specific heats of, i, 31.
—— —— supersaturated, i, 436.
Saline solutions and water, solubility of gypsum in, ii, 112.
Saliva, peptone-forming ferment in, ii, 347.
—— transformation of glycogen into grape-sugar by, ii, 911.
Salt in beer, ii, 940.
Salt, common, and sal-ammoniac, separation of, ii, 238.
Salt-solutions and attached water, i, 36.
Salt and water, crystallised compound of, i, 440.
Salts, acid, new series of, ii, 428.
Salts of the Algerian marshes, ii, 176.
Salts, condition of, in solution, ii, 273.
Salts, metallic, high melting points with special reference to those of, i, 365.
Salts and acids, inversion of sugar by, i, 451.
Samarskite, ii, 715.
Sanidine, pseudomorph of, after leucite, i, 699.
Santonamide, hydro-, i, 471.
Santonate, ethylic, i, 90.
Santonate, methylic, i, 470.
Santonic acid, derivatives of, i, 470.
Santonic acid, hydro-, i, 470.
Santonic acid, meta-, i, 471.
Santonic acid, photo-, i, 471.

Santonide, acetylhydro-, i, 470.
Santonin, crystalline form of some derivatives of, i, 472.
Sap, rise of, in plants, &c., ii, 348.
Sarcine, constitution of, ii, 741.
Sarcolactic acid, ii, 882.
Sarcosinic acid and shellac, i, 479.
Sauer's method for estimating sulphur, modification of, ii, 798.
Savin, terpene from essential oil of, i, 560.
Saynite, a new nickel ore, i, 581.
Saynite, not a distinct mineral, but a mineral mixture, ii, 858.
Scammony, new method for the extraction of resin of, ii, 950.
Scarlet runner, absorption of water and lime-salts by the leaves of, ii, 209.
Sclerotic acid, the active principle of ergot, ii, 628.
Scheelite, association of gold with, in Idaho, U.S., ii, 713.
Schizomycetic fermentation of glycerin, mannite, starch and dextrin, ii, 214.
Schönbein's test for nitrates, ii, 799.
Scorodite, occurrence of, in greenstone, ii, 283.
Sea-water, action of, on land, i, 106.
Sea-weed, alkali from, i, 237.
Seedlings, formation of sulphuric acid in, i, 104.
Seeds, specific gravities of, ii, 798.
Seeds, water in, ii, 797.
Selenates, molecular volume of, i, 267.
Selenates and sulphates, molecular volumes of, i, 437.
Selenides and tellurides, metallic, ii, 570.
Selenious oxide, action of halogen acids on, i, 45.
Selenium, atomic weight of, i, 44.
—— dependence of the electric conductivity of, on heat and light, i, 677.
—— methods of estimating, in selenureas, ii, 189.
Selenium-compounds of ethyl, i, 290.
Selenurea, isodibenzyl-, ii, 189.
Selenurea, monobenzyl-, ii, 189.
Selenureas, and a method of estimating the selenium in them, ii, 189.
Semi-opal, pseudomorph of, after calcite, i, 694.
Senna, bladder, gases in the fruit of the, i, 195.
Sensitiveness to light of various salts of silver, ii, 690.
Sepiolite, fibrous variety of, from Utah, ii, 852.
Serpentine, occurrence of chromite in, ii, 120.
Serum and corpuscles, distribution of the carbonic anhydride contained in blood between the, ii, 909.
Sewage, effect of sulphate of alumina on, i, 355.
Sewage of Paris, ii, 524.
Sewers, &c., effect of, on the purity of the soil, i, 240.
Shell-lac and sarcosinic acid, i, 479.
Silica in grasses, i, 336.
Silica, manufacture of gelatinous, from blast-furnace slags, ii, 239.
Silicates, disintegration of, i, 340.
Silicates which are insoluble in the ordinary mineral acids, new method of estimating ferrous oxide in, ii, 649.
Silicates, opalescence produced by, in phosphorus salt, i, 489.
Silicic acid, effect of, upon the estimation of phosphoric acid by ammonium molybdate, i, 344.
—— —— estimation of phosphoric acid in presence of, ii, 353.
Silicofluorides of iron and cobalt, i, 690.
Silicon thiocyanate, i, 705.
Silicon and manganese, preparation and use of alloys of, in casting steel, ii, 522.
Silicotungstates of cæsium and rubidium, i, 175.
Silk, bleaching of raw Eggermoth, and other so-called wild silks, ii, 243.
Silk industry, ii, 524.
Silk, solubility of, in an alkaline glycerin-copper solution, ii, 379.
Silver, action of, on nitric acid, ii, 71.
—— action of potassium ferricyanide on, and the conversion of silver negatives, ii, 234.
—— direct reduction of, from its sulphide, ii, 843.
—— extraction of, by means of calcium thiosulphate, i, 352.
—— sensitiveness to light of various salts of, ii, 690.
—— use of palladium instead of, in electro-deposition, ii, 239.
Silver benzenesulphonate and metabromobenzenesulphonate, action of bromine on, ii, 459.
Silver bromide, sensitiveness of, to the green rays, as modified by the presence of other substances, i, 266.
Silver chloride, bromide, and iodide, blowpipe examination of, by means of bismuth sulphide, ii, 356.
Silver cyanide, action of, on dibromethyl bromide, ii, 869.
Silver dibromacetate, decomposition of, when heated with alcohol, ii, 93.
—— —— decomposition of, when heated with dry ether, ii, 93.

Silver dibromacetate, decomposition of, when heated with water, ii, 91.
Silver nitrate, attempt to form double salts of, with other nitrates, ii, 843.
—— —— reduction of, by hydrogen, i, 282.
—— —— action of, on benzyl iodide, i, 310.
Silver oxalate, action of, on ethene and propene bromides, ii, 422.
Silver oxide, bromine and water, product of the oxidation of glycogen with, i, 64.
Silver-ultramarine, ii, 572.
Skin of the negro, chemical character of the pigment of the, i, 329.
Slags, quantitative analysis of, ii, 356.
Slags from blast-furnaces, manufacture of aluminium sulphate, gelatinous silica and calcium chloride from, ii, 239.
Slate, aluminous, and granite-block of Barr-Andlau, chemical examination of the contact zones of the, ii, 413.
Snow, foreign bodies in, i, 288.
Soap, analysis of, i, 755.
Soda in potashes, direct determination of, ii, 510.
Soda, presence of thio-cyanates in commercial, i, 353.
Soda and potash, direct preparation of, from their chlorides, ii, 945.
Soda-process, Leblanc's, temperature required in, and composition of the gases evolved, i, 236.
Sodium salts, decomposition of some ammonium salts by, i, 490.
Sodium and potassium, separation of, ii, 921.
Sodium acetate, precipitation of iron and alumina by, i, 344.
Sodium-amalgam, action of, on the three isomeric oxybenzoic acids, ii, 338.
Sodium bicarbonate, dissociation of, at 100°, i, 439.
Sodium bromide and iodide, preparation of, i, 277.
Sodium bromoplatinite, ii, 277.
Sodium carbonate, action of, on barium oxalate, ii, 249.
—— —— action of, on calcium carbonate, ii, 246.
—— —— action of, on lead oxalate, ii, 250.
—— —— action of, on strontium oxalate, ii, 249.
—— —— reactions of manganese and chromium with, i, 489.
—— —— solubility of bismuth oxide in, i, 490.
Sodium chlorate, etched figures on, ii, 116.
Sodium chloride, adulteration of sodium-palladium chloride with, ii, 225.
—— —— combinations of ammonium chloride with, ii, 839.
—— —— relation of, to certain animal fermentation-processes, i, 101.
Sodium chloride and potassium chloride, double decomposition of, in the animal organism, i, 731.
Sodium dioxide, i, 125.
Sodium hydrate, action of, on inactive fermentation amylic alcohol, i, 449.
Sodium hyposulphite, action of, on the hæmatin of blood, ii, 346.
Sodium mercaptide, ii, 294.
—— —— action of, on iodo-methane, methene iodide, and chloroform, ii, 293.
Sodium oxalate, action of, on barium carbonate, ii, 249.
—— —— action of, on calcium carbonate, ii, 245.
—— —— action of, on lead carbonate, ii, 250.
—— —— action of, on strontium carbonate, ii, 248.
Sodium peruranate (double peroxide of sodium and uranium), i, 136.
Sodium phosphate, action of ammonia on, ii, 703.
Sodium salicylate, influence of, on bodily temperature, i, 732.
Sodium sulphate and ammonium sulphate, separation of, ii, 238.
Sodium and calcium hypochlorites, action of, on urea, ii, 226.
Soil, absorption of bases by the, ii, 913.
—— effect of sewers, &c., on the purity of the, i, 240.
—— influence of, on the nitrification of nitrogenous organic substances in manures, i, 735.
Soils, some experiments made with a view to ascertain the practical nature of a proposed method of determining the mineral strength of, by means of water culture, i, 156.
Solar spectrum, decomposition of carbonic acid in the, by the green parts of plants, ii, 635.
Solids, volume-constitution of, ii, 404, 698.
Soluble glass, preparation of, from fossil meal, i, 757.
—— —— use of, in the textile industry, i, 757.
Solution, condition of salts in, ii, 273.
Solutions, supersaturated, ii, 696.
Sordidin, ii, 780.
Sparteine, nicotine, and conine, improved method of obtaining, i, 714.

Spathic mineral, crystals of magnetic oxide of iron formed by roasting a, i, 446.
Specific gravity of easily decomposible bodies, new method for the determination of the, ii, 697.
Specific gravity of fats at high temperatures, determination of the, ii, 108.
—— —— of iodine trichloride, ii, 697.
Specific heats of a gas, ratio of the two, i, 162.
—— —— of saline solutions, i, 31.
Spectra of chemical compounds, ii, 688.
Spectroscopical notes, ii, 269, 915.
Spectrum, decomposition of carbonic acid in the solar, by the green parts of plants, ii, 635.
Specular iron, rutile from the Binnenthal after, ii, 856.
Speiss-cobalt, composition of, ii, 176.
Spiegeleisen, estimation of manganese in, ii, 1.
—— estimation of manganese and phophorus in, ii, 648.
Spiegeleisen and ferromanganese, determination of manganese in, ii, 647.
Spinel group, relation of franklinite to the, i, 701.
Stannic chloride, action of, on benzene, ii, 324.
Stannous chloride, estimation of iron by, ii, 223.
Starch, best means of utilising the waste water in the manufacture of, from potatoes, ii, 943.
Starch from cacao, ii, 363.
Starch from different sources, differences in the diastatic reactions of, i, 453.
Starch and iodine reaction, i, 107.
Starch, modification of, in vegetables, i, 104.
—— optical properties of, i, 294.
—— relation between the quantity of, in potatoes, and their relative density, and a new table for calculating the percentage of starch in potatoes from their specific gravity, ii, 233.
—— schizomycetic fermentation of, ii, 214.
Staurolite crystals from Fannin, Georgia, i, 582.
Steam, rise of temperature occasioned by passing, into saline solutions, and on the temperature of the vapours from saline solutions, i, 430.
—— temperature of, formed under normal conditions, ii, 274.
Stearic acid, conversion of ricinoleic acid into, ii, 314.
Stearic acid, nitro-, i, 590.
Steel, calculation of the percentage of chemically combined carbon in analyses of, by Eggertz's colorimetric method, i, 742.
Steel, some changes in the physical properties of, produced by tempering, i, 175.
—— hardening of, i, 112.
—— occluded oxygen in, ii, 815.
—— presence of free ammonia in cast, ii, 169.
—— solution of gases in, i, 51.
—— use of alloys of manganese and silicon in casting, ii, 522.
Steel, cast-iron and wrought-iron, detection of copper in, ii, 926.
Steel and chrome-iron, analysis of, ii, 357.
Steel and iron, estimation of aluminium and chromium in, ii, 802.
—— —— estimation of carbon in, ii, 927.
—— —— estimation of phosphorus in, ii, 927.
—— —— nomenclature of, ii, 239.
Steel, manganese-, ii, 376.
Stibine, triethylmethyl-, absence of rotatory power in, ii, 734.
Stibnite, evolution of antimony from, by nascent hydrogen, i, 174.
—— unusual form of, ii, 854.
Stilbene, formation of, from dibenzyl, i, 74.
Stilbite (desmine) of Nova Scotia, i, 582.
Stolba's method for the alkalimetric estimation of phosphoric acid, ii, 800.
Stomach and blood, action of fuchsine introduced into the, i, 487.
Stomates and leaves, functions of, in promoting exchange of gases between plants and the atmosphere, ii, 634.
Stove-pipe deposit, i, 235.
Strengite, a new mineral, ii, 410.
Strontianite of Hamm, Westphalia, crystal form of, ii, 857.
Strontium, diffusion of, in nature, at the present time and at various geological epochs; consequences relative to mineral waters, ii, 577.
Strontium carbonate, action of sodium carbonate on, ii, 248.
Strontium oxalate, action of strontium carbonate on, ii, 249.
Strophantus hispidus, active principle of, ii, 501.
Structure, chemical, and digestion, differences of, amongst animals, ii, 202.
Strueverite, i, 702.
Strychnine, testing of quinine salts for, i, 748.
Strychnine polysulphydrates, ii, 789.

Strychnine and bromine, polysulphydrates of, ii, 905.
Styrax, i, 214.
Styrax, volatile oil of, i, 478.
Styrolene alcohol, or phenyl glycol, ii, 614.
Substances boiling at high temperatures, method of determining vapour-densities of, i, 34.
Substances, solution of difficultly soluble, ii, 217.
Succinate of ethyl, action of alkali-metals on, ii, 319.
Succinate of sodium and succinic anhydride, products of the action of, on benzoic aldehyde, i, 394.
Succinic acid, action of bromine on, ii, 883.
Succinic acid, dibromo-, conversion of normal pyrotartaric acid into, ii, 592.
Succinic anhydride and sodium succinate, products of the action of, on benzoic aldehyde, i, 394.
Succinyl succinate, diethyl,- decomposition of, in alkaline solution in the absence of air, ii, 319.
Succinylphenylenediamine, di-, i, 474.
Sugar, alleged power of glycerin to replace, i, 220.
—— Böttger's test for, ii, 930.
—— critical experiments on the formation of, in the blood, i, 485.
—— estimation of, ii, 226.
—— estimation of, by standard solutions, i, 744.
—— experiments to demonstrate the conversion of, when added to fermenting must and marc of grapes, i, 358.
—— experiments to determine the loss of, in fermenting the must and marc of grapes, i, 236.
—— influence of the leaves and flowering branches on the nature and quantity of the, contained in the flower-stem of the agave, ii, 506.
—— method of extracting and purifying, ii, 241.
—— optically inactive, ii, 732.
—— physiology of, in relation to the blood, ii, 909.
—— presence of, in the leaves of beets, i, 336, 487.
—— probable utilisation of, for the production of cellulose in vegetation, i, 106.
—— researches on the inversion of, by acids and salts, i, 451.
—— transformation of the crystallisable portion of brown, into inactive glucose, ii, 303.
Sugar, grape-, ii, 303.
—— —— crystallised, ii, 730.
Sugar, grape-, preparation of chemically pure, i, 705.
Sugar-cane, aconitic acid in the juice of the, ii, 182.
Sugar-industry, present state of, in France, i, 116.
Sugar-liquors, application of magnesia to the defecation of, i, 343.
Sugars and acid, estimation of, in 37 varieties of eating apples and six varieties of cider apples, ii, 514.
Sulphamide, tolueneortho-, ii, 775.
Sulphate of barium precipitates obtained in quantitative analyses, purification of, i, 737.
Sulphate of calcium, some compounds of, ii, 399.
Sulphate of zinc, purification of, ii, 113.
Sulphates, acid, of ammonium, ii, 703.
Sulphates, action of dry hydrogen chloride on, ii, 110.
—— action of dry gaseous hydrochloric acid on, at various temperatures, i, 439.
—— action of hydrochloric acid on metallic, ii, 840.
—— estimation of soluble, with standard solutions, i, 227.
—— determination of alkaline, i, 738.
—— preparation of cupric and ferric oxides from the, so as not to obtain basic sulphates, i, 288.
Sulphates of the alkalis and alkaline earths, volumetric analysis of a mixture of, ii, 353.
Sulphates and selenates, molecular volumes of, i, 267, 437.
Sulphatoperiodides of organic bases, i, 713.
Sulphatoperiodides of quinine, i, 211.
Sulphides and hydrogen dioxide, i, 23.
Sulphides of the alkali-metals, behaviour of, to water, ii, 111.
—— —— use of, in leather dressing, ii, 248.
Sulphides, di-, reactions of aromatic, i, 463.
Sulphides of ethyl, i, 585.
Sulphides, metallic, dissociation of ammoniacal salts in presence of, ii, 829.
—— —— some general properties of, ii, 842.
Sulphides, native, experimental researches, ii, 708.
Sulphine-compounds, isomeric, i, 184.
Sulphinic acid, ethyl-, ii, 734.
Sulphinic acid, isobutyl-, ii, 735.
Sulphinic acids of the fatty group, formation of, from the chloranhydrides of the sulphonic acids, ii, 734.
Sulphite of potassium, action of neutral, on the quinones, ii, 892.

Sulphobenzide-dicarbonic acid, diamido-, ii, 619.
Sulphocarbamides. See Thiocarbamides.
Sulphocarbimides. See Thiocarbimides.
Sulphocarbonates. See Thiocarbonates.
Sulphocyanates. See Thiocyanates.
Sulphocyanogen, pseudo-, i, 195.
Sulphodicarbonic acids, ii, 314.
Sulphomolybdate of ammonium, as a test for alkaloïds, ii, 230.
Sulphones, aromatic, ii, 612.
Sulphonic acids, formation of sulphinic acids of the fatty group from the chloranhydrides of the, ii, 734.
Sulphonyl and bromine, replacement of, by hydrogen in the benzenesulphonic acids, ii, 191.
Sulphoparabromobenzoic acid, i, 82.
—— —— action of zinc-dust on the chlorides of, i, 468.
Sulphur, action of, at high temperatures on normal paraffins, ii, 867.
—— from Cianciana and Lercara, in Sicily, i, 583.
—— in coal, determination of, ii, 217.
—— estimation of, in coal-gas, i, 492, 741.
—— detection of free, i, 341.
—— extraction of, i, 759.
—— influence of, on the excretion of sulphuric acid in the urine, ii, 911.
—— in iron, some methods for the estimation of, ii, 799.
—— new method for the determination of, in coal-gas, i, 739.
—— modification of Sauer's method for estimating, ii, 798.
—— precipitated, i, 272.
—— preparation of, from pyrites, ii, 235.
—— prismatic and octohedral, i, 44.
—— rhombic crystals of, obtained by fusion, ii, 860.
—— solution of, in acetic acid, ii, 276.
Sulphur-gases, regulation of the escape of, in the manufacture of sulphuric acid, ii, 815.
Sulphur-well, old, at Harrogate, contribution to the history of the, i, 181.
Sulphur bromide, behaviour of, to sulphuretted hydrogen, i, 272.
Sulphur mercaptides or ethylpolysulphides, ii, 296.
Sulphur trioxide, action of, on sulphydrates, i, 463.
Sulphur and copper, method of estimating in cupreous iron pyrites, and in the burnt ore before and after lixiviation, ii, 650.
Sulphur and oxygen, affinity of metals for, ii, 704.
Sulphur, phosphorus, arsenic, chlorine, bromine and iodine, new method for the gravimetric and volumetric determination of, in organic substances, and in vegetable and animal compounds, as well as for the determination of sulphur in coal-gas, i, 739.
Sulphureas, two new, i, 70.
Sulphuretted hydrogen, behaviour of bromine and sulphur bromide to, i, 272.
Sulphuretted waters, formation of natural, i, 704.
Sulphuric acid, action of, on acetylene, ii, 583.
—— —— action of dilute, on hydrobenzoïn and isohydrobenzoïn, i, 460.
—— —— action of dilute, on trimethyl carbinol, ii, 874.
—— —— apparatus for demonstrating the manufacture of, i, 438.
—— —— estimation of free, in vinegar, &c., ii, 917.
—— —— denitrification of nitrous, by sulphurous acid, ii, 944.
—— —— formation of, in seedlings, i, 104.
—— —— influence of sulphur on the excretion of, in urine, ii, 911.
—— —— production of, in the combustion of coal-gas, ii, 110.
—— —— volumetric estimation of, by barium chloride solution in acid liquids, i, 737.
—— —— volumetric estimation of, in waters, ii, 917.
Sulphuric acid and oxidising agents, action of, on morphine and its salts, ii, 906.
Sulphuric acid and water, heat disengaged by the union of, ii, 824.
Sulphuric anhydride and a new sulphuric hydrate, ii, 164.
Sulphurous acid, electrolysis of, ii, 820.
Sulphurous acid, denitrification of nitrous sulphuric acid by, ii, 944.
Sulphurous acid, mode of generating, for use as a disinfectant, i, 236.
Sulphurous and arsenious acids, oxidation of, ii, 841.
Sulphuryl chloride, action of, on alcohols, i, 182.
Sulphuryl chloride, and its behaviour to alcohols, ii, 287.
Sulphuryl chloride and ethylsulphuric chloride, action of, on aniline, ii, 447.
Sulphydrates, action of sulphur trioxide on, i, 463.
Sulphydrates, poly-, of strychnine and brucine, ii, 905.

Sun-flower (*Helianthus annuus*), examination of, i, 487.
Sunlight, &c., influence of, on the electrical behaviour of metals dipped in water or in saline solutions, ii, 818.
Superfused bodies, application of the principle of dissimilar molecules to, i, 435.
Superphosphates, extraction of the so-called soluble phosphoric acid from, i, 759.
Supersaturated solutions, i, 436; ii, 696.
—— —— application of the principle of dissimilar molecules to the phenomena of, i, 435.
Syenite-granite or hornblende-granite from Sauk Rapids and St. Cloud, Minnesota, ii, 723.
Syenite mountains of Ditro, ii, 172.
Synaptase and diastase, microzymes of germinated barley and sweet almonds as producers of, i, 106.
Synthesis by means of aceto-acetic ethers, ii, 432.
Synthetical and analytical operations, a new apparatus for heating substances in sealed tubes under high pressure suitable for, ii, 639.

T.

Tannic acid of guarana, ii, 897.
Tannin, combination of, with vegetable tissue, ii, 350.
—— estimation of, i, 745.
—— presence of, in gentian root, ii, 331, 897.
Tannin, œno-, ii, 897.
Tannins, some methods of estimating, ii, 807.
Tanning material, a new, ii, 897.
Tantalite from Yancey County, North Carolina, ii, 281.
Tantalium-group, researches on the metals of the, and on neptunium, a new metal, ii, 166.
Taper, lecture-experiment to show the increase of weight by burning a, i, 437.
Tapers, arsenic in, ii, 922.
Tar of beechwood, constituents of creasote from, ii, 888.
Tar from lignite, i, 96.
Tarconine, ii, 541.
Tartaric acid, action of, on calcium carbonate, ii, 647.
Tartaric acid, normal oxypyro-, and its isomerides, i, 63.
Tartaric acids, pyro-, isomeric, i, 61.
Tartaric acid, pyro-, Reboul's normal, i, 188.
Tartronamic acid, ii, 823.
Tartronic acid, ii, 740.
Taurine, salts of, i, 481.
Taxine, a poisonous alkaloïd present in the leaves and seeds of *Taxus baccata* (L.), i, 476.
Tea, determination of theine in, i, 110.
Tea-leaves, micro-chemistry as applied to the identification of, ii, 517.
Tectochrysin, chrysin, and higher homologues, ii, 342.
Tellurides and selenides, metallic, ii, 570.
"Tempelbrunnen" at Rohitsch, analysis of the, ii, 176.
Temperature of the body, influence of salicylic acid and sodium salicylate on, i, 732.
Temperature, dependence of plant respiration upon, i, 334.
—— formation of compounds at a, considerably above that of their decomposition, ii, 273.
—— influence of the surrounding, on the tissue-metamorphosis of warm-blooded animals, i, 327.
—— influence of, on the respiration of cold-blooded animals, i, 327.
Temperatures, maintenance of constant, ii, 697.
Tensions, latent heats and atomic weights of vapours, simple relations between, i, 162.
Tephroite from Langban, in Sweden, ii, 851.
Terebenthene hydrochloride, i, 593.
Terebenthene, nitroso-, i, 556.
Terephthalate, acetoxy-dimethylic, ii, 337.
Terephthalate, oxy-dimethylic, ii, 337.
Terephthalic acid, oxy-, decompositions of, ii, 337.
Terephthalic aldehyde, i, 206.
Terpene, ethyl-, ii, 626.
Terpenes in the organism, behaviour of, i, 487.
Terpenes, preparation of the nitroso-chlorides of the, i, 554.
Terpenes, nitroso-, isomeric, i, 554.
Tetrabromodiallyloxalic acid, ii, 883.
Tetracrylic acid, a new acid belonging to the acrylic series, ii, 432.
Tetrahedrite, analysis of, ii, 853.
Tetrahydroisoxylene, and the constitution of camphoric acid, ii, 446.
Tetranitrochrysophanic acid, i, 611.

Thallene, ii, 422.
Thallious platinocyanide, ii, 251.
Thallium, action of, on nitric acid, ii, 86.
—— reactions of metallic, before the blowpipe, i, 489.
Thallium mercaptide, ii, 295.
Thapsia garganica and *Thapsia Silphium*, comparative chemical examination of, ii, 914.
Theine, determination of, in tea, i, 110.
—— new method for the estimation of, ii, 517.
Theobromine from cacao, ii, 363.
Theobromine, ethyl-, i, 93.
Thermal expansion, experiments on, ii, 820.
Thermal changes accompanying the solution of ammonium nitrate in water, i, 678.
Thermic phenomena of iodic acid, ii, 274.
Thermo-chemical researches, i, 574.
Thermo-chemical researches on platinum and palladium, ii, 566.
Thermo-chemistry of aniline and other bodies of the same group, ii, 568.
—— of citric acid, i, 681.
—— some fundamental data in, ii, 823.
—— of the oxygen molecule, i, 8.
—— of the substituted anilines, ii, 696.
Thermo-electric force of zinc and solution of zinc sulphate, ii, 271.
Thiacetaldehyde, ii, 305.
Thialdehydes, ii, 305.
Thiamides, constitution of, i, 618.
Thiamides of monobasic organic acids, i, 616.
Thio-alphatolylamide, i, 616.
Thiobenzamide, action of nascent hydrogen on, ii, 887.
Thiocarbamide, acetophenylic, i, 313.
Thiocarbamides, two new, i, 70.
Thiocarbanilide, reaction of, with hydroxylamine, i, 314.
Thiocarbimides, action of alcoholic potash on, i, 68.
—— action of alcohols and phenols on, ii, 871.
Thiocarbanilo-ammonaldehyde, i, 313.
Thiocarbonates, alkaline, estimation of carbon disulphide on, i, 744.
Thiocyanate, allylic, reaction of, with aldehyde-ammonia, i, 313.
Thiocyanate of melamine, ii, 309.
Thiocyanate, phenylic, action of bromine on, i, 68.
Thiocyanates of acid radicles, ii, 869.
Thiocyanates, action of alkaline, upon the hydrochlorides of the alkaloïds of the fatty series, ii, 309.
Thiocyanates, presence of, in commercial soda, i, 353.
Thiocyanates in urine, ii, 205, 347, 505.
Thiocyanates of the aromatic monamines, action of monochloracetic acid on the, ii, 873.
Thiocyanates, inorganic, ii, 872.
Thiocyanoplatinate of potassium, new, ii, 869.
Thiocyanic acid, action of nascent, on alcohol, ii, 423.
—— —— stains produced by, i, 457.
—— —— new compounds of, ii, 869.
Thiocyanic acid, per-, ii, 254.
Thiocyanic acid and its salts, action of monochloracetic acid on, ii, 872.
Thiodisulphodicarbonate of ethyl, ii, 314.
Thio-ethenecarbonate of ethyl, di, ii, 317.
Thio-ethenedisulphocarbonate of ethyl, di-, ii, 317.
Thio-ethenetetrasulphocarbonate of ethyl, di-, ii, 318.
Thio-ethers of benzene- and paratoluene-sulphonic acids, experiments for preparing the, i, 469.
Thioformamide, phenyl-, ii, 604.
Thioformanilide, ii, 604.
Thioformic ethers, ortho-, ii, 311.
Thiohydantoïn, ii, 599.
Thiohydroquinone, i, 81.
Thioglycollate of barium, ii, 595.
Thioglycollic acid, ii, 595.
Thioresorcin, i, 81.
Thiosinamine, allylic, i, 314.
Thiosulphate of calcium, extraction of silver by means of, i, 352.
Thiosulphate of potassium, i, 278.
Thorpe's method for the estimation of nitrogen in nitrates, ii, 799.
Thomsenolite and pachnolite, ii, 119.
Thymoquinone, oxy-, constitution of, ii, 476, 891.
Thymyltrichlorethane, di-, some derivatives of, i, 262.
Time method, examination of substances by the, ii, 381.
—— —— dehydration of hydrates by the, ii, 395.
Tin, action of, on nitric acid, ii, 84.
—— ancient specimen of, ii, 854.
—— heat of formation of the chlorides and oxides of, i, 576.
—— recovery of, from scraps of tinned iron, ii, 239.
—— volumetric estimation of, ii, 803.
Tin mercaptide, ii, 295.
Tin ores, analysis of, ii, 922.
Tin tetrachloride, action of, on benzene, toluene, and naphthalene, ii, 551.
Tinstone, pseudomorph of, after boracite, i, 698.

Tissue, influence of respiration on the metamorphosis of, i, 483.
Tissues of fruits, gases in the, ii, 913.
Tissue-metamorphosis and body-temperature in amphibia, relation between, i, 327.
Tissue-metamorphosis of warm-blooded animals, influence of the surrounding temperature on the, i, 327.
Titanic irons, action of titanium dichloride, chlorine, and hydrochloric acid on, i, 173.
Titanium chlorides, i, 168.
Titanium, some new compounds of, i, 688.
Titanium dichloride, chlorine, and hydrochloric acid, action of, upon titanic irons, and on mixtures of titanic acid and oxide of iron, i, 173.
Titanium nitrides, i, 174.
Titanium oxide obtained by the solution of titanium in acids, i, 688.
Titanium oxychloride, i, 171.
Titanium sesquioxide, i, 171.
Titration, fluorescein as an indicator in, i, 341.
Tolu balsam, constituents of, i, 720.
Toluene, action of antimony trichloride on, ii, 553.
—— action of heat on hydrocarbons derived from a double molecule of, by elimination of hydrogen, i, 74.
—— action of sulphuric acid on, ii, 774.
Toluene- and benzene dioxysulphide, new formations of, i, 463.
Toluene, formation of, from dibenzyl, i, 74.
Toluene, paradiamido-, and toluquinone, ii, 475.
Toluene, paranitro-, isomeric sulphoacids from, ii, 776.
Toluenedisulphonic acid, preparation of, ii, 611.
α-Toluenedisulphonic acid, ii, 893.
Tolueneorthosulphonic acid, ii, 775.
Toluenesulphamide, dinitropara-, ii, 471.
Toluenesulphinic acid, new method of preparing, i, 312.
Toluenesulphonic acid, bromodiamidopara-, ii, 472.
Toluenesulphonic acid, diamidopara-, ii, 471.
Toluenesulphonic acid, dinitropara-, ii, 470.
Toluenesulphonic acid, para-, method for preparing the thio-ethers of, i, 469.
Toluenesulphonic acids, dinitro-, ii, 469, 612.
Toluenesulphonic chloride, bromide, nitrate, and sulphate, diamidopara-, ii, 472.
Toluenesulphonic chloride, dinitropara-, ii, 471.
Toluhydroquinone, ii, 476.
Toluic aldehyde, ortho-, ii, 894.
Toluidide, aceto-, action of phosphorus pentachloride on, i, 91.
Toluide, formortho-, ii, 754.
Toluidine sulphatoperioddide, i, 716.
Toluquinhydroné, ii, 476.
Toluquinone, nitro-, and chloranilic acid, ii, 476.
Toluquinone and paradiamidotoluene, ii, 475.
Tolyl series, amidazo-compounds in the, ii, 453, 767.
Tolylcarbamide, phenylpara-, ii, 886.
Tolylenediamine, ortho-, reaction of, with benzoic aldehyde, ii, 753.
—— —— reaction of, with phthalic anhydride, ii, 753.
Tolylenediamine, reaction of, with formic acid, ii, 752.
Tolyloxamethane, para-, action of phosphorus pentachloride on, i, 710.
Tolylphenylacetic acid, para-, ii, 618.
Tolylphenyl ketone, para-, some derivatives of, i, 464.
Torpedoes, lecture-experiment on, ii, 275.
Torricellian vacuum, determination of vapour-densities in the, i, 34.
Torsion, elasticity of, i, 39.
Touchstone, composition of, i, 445.
Toxic and antiseptic vapours, action of, on the fermentation of fruits, ii, 507–8.
Trachite, analysis of, ii, 853.
Tremolite, a variety of, called Goldsmith's hexagonite, ii, 720.
Triacetonamine, nitroso-, decomposition of, by acids, ii, 583.
Triacetyl-purpurin, ii, 625.
Triamidophenol, action of bromine on, in presence of water, ii, 778.
Tribromhydrocotarnine, derivatives of hydrobromide of, ii, 537.
Tribromobenzenesulphonic acids, ii, 461, 465, 469.
Tribromophloroglucin, action of nitric acid on, ii, 193.
Trichloracetic acid, action of sodium ethylate on, i, 291.
Trichlorethidenedibenzamide, i, 314.
Trichlorobutyric acid, action of potash on, i, 59.
Tridymite-bearing andesite from Gerecses, 280.
Tridymite from the Hargittastock, Siebunbürgen, ii, 720.
Triethylamine derivatives, ii, 877.
Triethyl-methyl-stibine, absence of rotatory power in, ii, 734.

Tri-idoresorcin, i, 463.
Trimethylamine, reactions of an aqueous solution of, with metallic solutions, ii, 358.
Trimethyl carbinol, action of dilute sulphuric acid on, ii, 874.
Trioxyanthraquinones, simultaneous formation of two, i, 209.
Triphane from Brazil, ii, 850.
Triphyllite, from Grafton, New Hampshire, chemical composition of, ii, 714.
Tripolite of Barbadoes, i, 177.
Tripolite, Scottish, ii, 174.
Triticum sativum, analysis of, ii, 211.
Tungsten and molybdenum, higher oxides of, i, 141.
Tungstic acids, arsenio-, phospho-, and platino-, ii, 848.
Tungstic anhydride, action of phosphorus pentachloride on, ii, 709.
Turkey corn, alkaloïd found in damaged, i, 323.
Turnerite, chemical examination of, ii, 715.
—— notes on, ii, 117.
Turpentine-oil, decomposition of, at a high temperature, ii, 341.
Turpentine-oil, researches on, i, 592.
—— —— oxidised, antiseptic and disinfecting powers of, i, 184.

U.

Ulexite and franklandite, relative composition of, ii, 174.
Ulmus campestris, analysis of, ii, 211.
Ultramarine, i, 686.
—— action of alkaline haloïds upon, ii, 707.
—— note on, i, 167.
Ultramarine furnaces, temperature and composition of gases evolved from, i, 111.
Ultramarine, silver-, ii, 572.
Uralite-porphyry of Vaksala, microscopic examination of the, ii, 579.
Uranate, per-, of ammonium, i, 134.
—— —— of potassium, i, 140.
—— —— of sodium, i, 136.
Uranium residues, recovery of, i, 345.
Uranium solution, volumetric estimation of arsenic acid and phosphoric acid by, i, 741.
Uranium, new oxides and compounds of, i, 127.
Uranium oxides higher than the tetroxide, i, 133.
Uranium tetroxide, i, 127.
Uranium tetroxide, anhydrous, i, 133.
Uranium, iron, and chromium, separation of, ii, 926.
Urea, action of aldehydic and acetonic acids on, ii, 741.
—— action of sodic and calcic hypochlorites on, ii, 226.
—— in the blood, i, 329, 486.
—— estimation of, by means of sodium hypobromite, i, 534, 538.
—— form of combination of, in the liver, &c., i, 730.
—— reaction of, with furfurol, ii, 742.
Urea, acetylene-, ii, 885.
Ureas, selen-, and a method of estimating the selenium in them, ii, 189.
Ureides, malic, conversion of, into alloxanates, ii, 741.
Ureides, pyruvic, ii, 741.
Urethane, action of acetyl chloride on, i, 614.
—— action of benzoyl chloride on, i, 615.
Uric acid, constitution of, ii, 741.
Uric acid group, synthetic researches on the, ii, 740.
Urinary mucus, non-existence of, ii, 633.
Urine, acetic acid, formic acid, &c., in, ii, 504.
—— acetone in, i, 101.
—— estimation of albumin in, ii, 368.
—— fermentation of, i, 222.
—— influence of sulphur on the excretion of sulphuric acid in the, ii, 911.
—— levorotatory substance in normal, i, 731.
—— human, phenol-forming substance in, i, 330.
—— relation of phosphoric acid to nitrogen in, ii, 205.
—— separation of sal-ammoniac in, ii, 206.
—— thiocyanates in, ii, 205, 347, 505.
Urine of the pig, guanine in, i, 330.
Uroxanic acid, decomposition of, i, 69.
Usnic acid, i, 89.
Usnic acid, carbo-, ii, 896.
Uvitic acid, derivatives of, ii, 896.

V.

Vacuum apparatus for fractional distillation in, i, 682.
Vacuum, Torricellian, ii, 163.
Valeric acid, normal, from normal caproic acid, i, 590.
—— —— purification of, i, 589.

Vanadate of ammonium precipitated from alkaline vanadates with ammonium chloride, ii, 802.
Vanadic acid, separation of, from alkalis, ii, 922.
—— —— separation of, from alumina and ferric oxide, ii, 175.
—— —— separation of, from the oxides of aluminium and iron, ii, 922.
Vanadinite, red, from the lead works on the Ober, near Kappel, i, 583.
Vanadium aniline-black, ii, 950.
Vanadium minerals, some American, i, 175.
Vanadium minerals, two new, i, 444.
Vanillic acid, aldehydo-, i, 87.
Vanillin and coniferyl series, constitution of compounds of the, i, 87.
Vapour-density, determination of, i, 165; ii, 404, 569, 570.
—— —— a modification of Dumas' method of determining, ii, 697.
—— —— modifications of Hofmann's apparatus for determining, ii, 140, 269.
—— —— method of determining the, of substances boiling at high temperatures, i, 34.
—— —— determination of, in the Torricellian vacuum, i, 33.
Vapours, diffusion of, through porous cells, ii, 835.
—— errors resulting from the application of the law of mixture of, in the determination of their density, i, 431.
—— laws of the compressibility, and the coefficients of dilatation of certain, i, 32.
—— new method of recognising dissociated, i, 273.
—— from saline solutions, temperature of, i, 430.
—— simple relations between the latent heats, atomic weights and tensions of, i, 162.
Vapour-tensions of homologous series, and on Kopp's law of constant differences of boiling points, ii, 822.
Variolite from Durance, structure and mineralogical composition of, ii, 412.
Variscite of Breithaupt and callainite of Damour, identity of the so-called peganite of Arkansas with the, ii, 852.
Varnish, improvements in the manufacture of, ii, 244.
Vasculose, i, 229.
Vegetable cell-walls, absorption of carbonic acid by, ii, 348.
Vegetable organs, cellulosic fermentation produced by, i, 106.
Vegetable tissue and tannin, combination of, ii, 350.
Vegetable tissues, general method of analysis of, i, 229.
Vegetable and animal substances, new method for the gravimetric or volumetric determination of phosphorus, arsenic, sulphur, chlorine, bromine, and iodine in, i, 739.
Vegetables, absorption of free nitrogen by the proximate principles of, under the influence of atmospheric electricity, i, 222.
—— analyses of preserved, ii, 952.
—— copper in, ii, 511.
—— modification of starch in, i, 104.
Vegetation, action of boric acid and of borates on, i, 223.
Vegeto-chemical phenomena, contributions to our knowledge of, ii, 348.
Velella limbosa, colouring-matter of, ii, 791.
Velocity of chemical action, ii, 831.
Veratric acid and veratrol, constitution of, i, 88.
Veratrine, ii, 906.
Veratrine, estimation of, ii, 367.
Veratrol and veratric acid, constitution of, i, 88.
Vetch-germs, glutamic acid from the juice of, ii, 739.
"Vinasse" from beetroot molasses, products of the dry distillation of, ii, 379.
Vine, function of chlorophyll in the, i, 732.
Vines, comparative analysis of the roots of, i, 226.
Vinegar, detection of mineral acids in, i, 752.
—— frequent occurrence of cupric acetate in, and estimation of copper in, ii, 927.
—— testing of, ii, 232.
—— &c., estimation of free sulphuric acid in, ii, 917.
Vinyl-anisol, para-, ii, 668.
Vinyl-benzene, isopropyl-, ii, 663.
Vinyl, ethyl-, derivatives of, ii, 867.
Viridic acid, colouring-matter of, i, 478.
Viscera, modification of the process for extracting the poisonous alkaloïds from the, i, 110.
Volcanic agency and formation of meteorites, i, 178.
Voltaic circuits, effect of heat upon, completed by an electrolyte, i, 429.
Volume, molecular, of sulphates and selenates, i, 267.
Volume-constitution of solids, ii, 404, 698.
Volume-relations of definite series of

compounds, remarkable regularity of, ii, 108.
Volumetric analysis, portable apparatus for, ii, 798.

W.

Walnut, saccharine matter obtained from the leaves of the, ii, 304.
Water, action of, on the chlorides of iodine, ii, 110.
—— action of, on glycols, i, 58.
—— action of, on the haloïd compounds of the alcohol-radicles (mono- and di-haloïd paraffins), ii, 422.
—— ascent of, caused by evaporating surfaces, i, 271.
—— attached, and salt-solutions, i, 36.
—— behaviour of the sulphides of the alkali-metals to, ii, 111.
—— best means of utilising the waste-, in the manufacture of potato-starch, ii, 943.
—— chalcedony-amygdaloïd filled with, ii, 860.
—— corrosion of lead by, i, 428.
—— decomposition of silver dibrom-acetate when heated with, ii, 91.
—— determination of impurities in the, of rivers and wells, ii, 919.
—— determination of the organic matter in potable, ii, 806.
—— for domestic use, conditions which should be fulfilled by, ii, 944.
—— effect on sunlight on the electrical behaviour of metals dipped in, ii, 818.
—— electric conducting power of, i, 429.
—— estimation of colour in, i, 231.
—— estimation of gases dissolved in, ii, 806.
—— free from air, polarisation of electrodes in, i, 266.
—— influence of, on the action of chlorine on iodine, ii, 276.
—— as oxidising and reducing agent, ii, 581.
—— production of ozone by the pulverisation of, i, 43.
—— in seeds, ii, 797.
—— solubility of mercury in, ii, 843.
—— synthesis of; lecture experiment, i, 438.
—— thermal changes accompanying the solution of ammonium nitrate in, i, 678.
Water of the hot spring at Pfeïfers in Switzerland, chemical observations on, ii, 284.
Water and anhydrous acids, heat disengaged by the union of, in the gaseous state, ii, 825.
Water and lime-salts, absorption of, by leaves, ii, 350.
—— —— absorption of, by the leaves of *Phaseolus multiflorus*, ii, 209.
Water and saline solutions, solubility of gypsum in, ii, 112.
Water and salt, crystallised compound of, i, 440.
Water and sulphuric acid, heat disengaged by the union of, ii, 824.
Waters, application of the ferrosopyrogallic reagent to the estimation of bicarbonates in, i, 340.
—— volumetric estimation of sulphuric acid in, ii, 917.
Waters, mineral, presence of strontium in, ii, 577.
Waters, mineral, of Neudorf, near Petschau, in Bohemia, analysis of, ii, 861.
Waters, natural, sulphuretted formation of, i, 704.
Waters, potable, putrescent organic matter in, ii, 812.
Water-culture, some experiments made with a view to ascertain the practical nature of a proposed method of determining the mineral strength of soils by means of, i, 156.
Wax, examination of, ii, 364.
Well-water, contamination of a, by gas-liquor, ii, 920.
Well- and river-water, determination of impurities in, ii, 919.
Wheat, effect of coating with oil, ii, 954.
White lead, composition of commercial, ii, 228.
Whortleberry juice, detection of, in wine, ii, 937.
Willow bark, acid of, ii, 905.
—— —— chemistry of, i, 720.
Wine, adulteration of, ii, 372.
—— coloured by fuchsine, ii, 521.
—— artificial colouring of, and the means of detecting the fraud, ii, 368, 935.
—— colouring matter of, ii, 368.
—— composition of an ancient, ii, 953.
—— detection of colouring matters in, i, 234.
—— detection of foreign colouring matters in red, ii, 938.
—— detection of fuchsine in, i, 324, 750.
—— detection of glycerin in, ii, 939.
—— detection of magenta in, ii, 939.
—— detection of the principal colouring matters used in the adulteration of, ii, 371.

Wine, detection of various colouring matters in, ii, 227.
—— determination of the residue of, i, 752.
—— dilution of; influence of plastering, fining, and brandying on the weight of the dry extract, i, 750.
—— estimation of the dried extracts of, ii, 939.
—— fining of, ii, 379.
—— identification of foreign colouring matters in red, i, 751.
—— observations respecting a dextrogyrate acid in, i, 456.
—— vegetable acids of, ii, 883.
Wine-lees, utilisation of, ii, 952.
Wine-must, concentration of, by cold, ii, 793.
Wines, optical behaviour of, ii, 521.
—— composition of Bohemian, ii, 953.
—— sophisticated with grape-sugar, detection of, ii, 939.
Wood, preservation of, ii, 244.
—— some products of the distillation of, at low temperatures, ii, 746.
Wood-spirit, researches on crude, ii, 291.
Wool, estimation of, in yarn, i, 349.
Wool and cloth dyed green with picric acid, ii, 243.
Woollen goods, cochineal-red for, ii, 380.
Work produced by the electric current, case of, i, 160.
Wort of beer, peptones of, ii, 521.

X.

Xanthate of potassium as an antiseptic, ii, 954.
Xanthate of potassium, determination of carbon sulphide, copper salts, and caustic alkalis by, ii, 929.
—— —— use of, for separating nickel and cobalt, ii, 597.
Xanthates, character of, ii, 925.
—— observations on some, ii, 597.
Xanthium spinosum, i, 720.
—— —— ash of, ii, 351.
Xanthene, constitution of, ii, 741.
Xanthophyll, ii, 350.
Xanthopurpurin, i, 87.
Xeronic acid, a new derivative of citraconic acid, ii, 736.
Xeronic anhydride, ii, 736.
Xeronic anhydride, conversion of citraconic anhydride into, i, 64.
Xylene, benzyliso-, i, 469.
Xylene, meta-, oxidation of the sulphoacids of, ii, 776.
Xylene, ortho-, occurrence of, in coal-tar, ii, 600.
Xylene, para-, preparation of from coal-tar oil, ii, 600.
Xylenes, derivatives of the, ii, 600.
Xylenesulphonic acids, preparation of isomeric, ii, 611.
Xylidate of zinc, abnormal solubility of, ii, 617.
Xylidines, i, 92.

Y.

Yam tubers, composition of, ii, 795.
Yarn, estimation of wool in, i, 349.
Yeast, manufacture of, i, 119.
Yeast, pure, i, 107.

Z.

Zeolites of the department Puy-de-Dôme, ii, 283.
Zeolites, simultaneous formation of, under the influence of hot springs, in the neighbourhood of Oran, Algeria, i, 444.
Zinc, action of, on nitric acid, ii, 73.
—— action of a mixture of ethyl and allyl iodides on ethyl formate in presence of, ii, 298.
—— for analytical use, i, 345.
—— detection of cadmium in presence of, i, 490.
—— estimation of, by precipitation as oxalate, ii, 924.
—— magnesium and aluminium in, ii, 707.
—— presence of, in the bodies of animals and plants, ii, 504.
—— Schaffner's method of estimating, ii, 221.
Zinc compounds, action of organic, on the chlorides of acid radicles, ii, 310.
Zinc cyanide, decomposition of, in carbonic acid, air, and pure hydrogen, i, 66.
Zinc fluoride, ii, 839.
Zinc hydride, i, 282.
Zinc mercaptide, ii, 295.
Zinc-methyl, action of, on bromacetyl-bromide, ii, 588.
Zinc ores, assay of, ii, 221.
Zinc phosphide (*Zincum phosphoratum*), ii, 113.
Zinc sulphate, purification of, ii, 113.

Zinc and allyl iodide, action of, on ethyl oxalate, i, 60, 455.
Zinc and copper, crystalline phosphate and arsenate of, i, 690.
—— —— detection of, in the human body, ii, 928.
Zinc and lead, estimation of, in minerals, by electrolysis, ii, 804.
Zinc, lead, manganese, and nickel, estimation of, ii, 924.
Zinc, manganese, nickel, and cobalt, separation of iron from, ii, 924.
Zinc and zinc-dust, reduction of organic haloïd compounds by, ii, 728.
Zinc and solution of zinc sulphate, thermo-electric force of, ii, 271.
Zinc-dust, action of, on the chlorides of sulphoparabromobenzoic acid, i, 468.
Zinkenite, analysis of, ii, 853.
Zircon in the amazon-stone of Pike's Peak, Colorado, ii, 720.
Zircon, colour of, ii, 856.
Zircon, distribution of, in rocks, ii, 577.